AMAL JYOTHI COLLEGE OF ENGINEERING

KANJIRAPPALLY, KOTTAYAM, INDIA 686 518

AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, KERALA

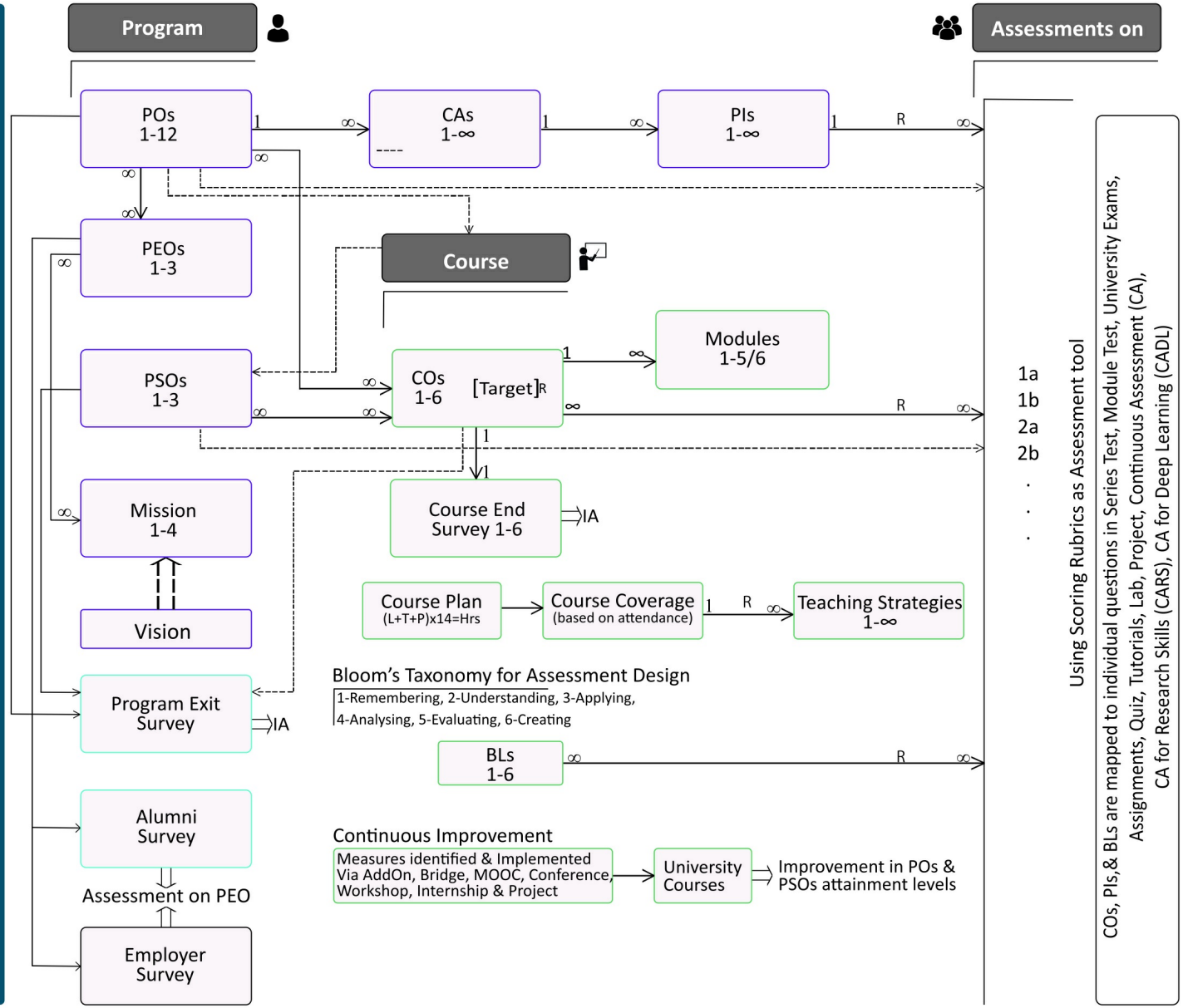
NAAC NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL 'A' Grade

COMPUTER SCIENCE & ENGINEERING

Outcome Based Education Scheme

CONTENTS

OUTCOME BASED EDUCATION FRAMEWORK (OBE) IN ACADEMIC ENTERPRISE SOLUTIONS



AMAL JYOTHI COLLEGE OF ENGINEERING

Weighted Average (WA)

(n1*1+n2*2+n3*3)/n1+n2+n3

n : No of students, multiplied with 3 scale value

Direct Assessment of CO

(33.33*Internals WA + 66.66*Externals WA)/100

Direct Assessment of PO / PSO

I. Course1.CO1-PO1|PSO1 Score=CO1 Attainment Score * CO1-PO1 |PSO1 MpScore.

II. DA of PO1|PSO1 =[Course1.CO1-O1|PSO1 Score+Course1.CO2-PO1|PSO1 Score+. . . +nthCourse.nthCO-PO1|PSO1 Score] / [Course1.CO1-PO1|PSO1 MpScore+Course1.CO2-PO1|PSO1 MpScore+. . . +nthCourse.nthCO-PO1|PSO1 MpScore]

Indirect Assessment for CO / PO / PSO

Weighted Average on 3-point scale from

Course End Survey -> IA for CO

Program Exit Survey -> IA for PO | PSO

CO / PO / PSO Attainment

(80*DA+20*IA)/100

DA: Direct Assessment, IA : Indirect Assessment

PO	Program Outcome
PEO	Program Educational Objective
PSO	Program Specific Outcome
CAs	Competencies to be Attained
PIs	Performance Indicators
COs	Course Outcomes | R Repeated Yearly
BLs	Blooms Taxonomy Levels

→ Mapping ---> Auto Mapping

Correlation

3-Substantial (High)/2-Moderate(Medium)/1-Slight (Low)

VISION

B.Tech

The Computer Science & Engineering department is committed to continually improve the educational environment in order to develop professionals with strong technical and research backgrounds

M.Tech

The Computer Science & Engineering department is committed to continually improve the educational environment in order to develop professionals with strong technical and research backgrounds

PhD

MISSION

B.Tech

- To provide quality education in both theoretical and applied foundations of Computer Science & Engineering.
- Support society by participating in and encouraging technology transfer.
- Create highly skilled Computer Engineers, capable of doing research and also develop solutions for the betterment of the nation.
- Inculcate professional and ethical values among students.

M.Tech

- Support society by participating in and encouraging technology transfer.
- To provide quality education in both theoretical and applied foundations of Computer Science & Engineering.
- Create highly skilled Computer Engineers, capable of doing research and also develop solutions for the betterment of the nation.
- Inculcate professional and ethical values among students.

PhD

PROGRAM OUTCOME

B.Tech-Computer Science & Engineering

Sl.No.	Outcome
PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and their engineering specialization to the solution of complex engineering problems.
PO2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics,natural sciences, and engineering sciences.
PO3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety, as well as cultural, societal, and environmental considerations.

PO4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex engineering activities with an understanding of their limitations.
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	Environment and sustainability: Understand the impact of professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects in multidisciplinary environments.
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

M.Tech-Computer Science

Sl.No.	Outcome
PO1	Scholarship of Knowledge: Acquire in-depth knowledge of specific discipline or professional area, including wider and global perspective, with an ability to discriminate, evaluate, analyse and synthesise existing and new knowledge, and integration of the same for enhancement of knowledge.
PO2	Critical Thinking: Analyse complex engineering problems critically, apply independent judgement for synthesising information to make intellectual and/or creative advances for conducting research in a wider theoretical, practical and policy context.
PO3	Problem Solving: Think laterally and originally, conceptualise and solve engineering problems, evaluate a wide range of potential solutions for those problems and arrive at feasible, optimal solutions after considering public health and safety, cultural, societal and environmental factors in the core areas of expertise.

PO4	Research Skill: Extract information pertinent to unfamiliar problems through literature survey and experiments, apply appropriate research methodologies, techniques and tools, design, conduct experiments, analyse and interpret data, demonstrate higher order skill and view things in a broader perspective, contribute individually/in group(s) to the development of scientific/technological knowledge in one or more domains of engineering.
PO5	Usage of modern tools: Create, select, learn and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex engineering activities with an understanding of the limitations.
PO6	Collaborative and Multidisciplinary work: Possess knowledge and understanding of group dynamics, recognise opportunities and contribute positively to collaborative-multidisciplinary scientific research, demonstrate a capacity for self-management and teamwork, decision-making based on open-mindedness, objectivity and rational analysis in order to achieve common goals and further the learning of themselves as well as others.
PO7	Project Management and Finance: Demonstrate knowledge and understanding of engineering and management principles and apply the same to one's own work, as a member and leader in a team, manage projects efficiently in respective disciplines and multidisciplinary environments after consideration of economical and financial factors.
PO8	Communication: Communicate with the engineering community, and with society at large, regarding complex engineering activities confidently and effectively, such as, being able to comprehend and write effective reports and design documentation by adhering to appropriate standards, make effective presentations, and give and receive clear instructions.
PO9	Life-long Learning: Recognise the need for, and have the preparation and ability to engage in life-long learning independently, with a high level of enthusiasm and commitment to improve knowledge and competence continuously.
PO10	Ethical Practices and Social Responsibility: Acquire professional and intellectual integrity, professional code of conduct, ethics of research and scholarship, consideration of the impact of research outcomes on professional practices and an understanding of responsibility to contribute to the community for sustainable development of society.
PO11	Independent and Reflective Learning: Observe and examine critically the outcomes of one's actions and make corrective measures subsequently, and learn from mistakes without depending on external feedback.

PhD-PhD in Computer Science

PROGRAM EDUCATIONAL OBJECTIVE

B.Tech-Computer Science & Engineering

Sl.No.	Objective
PEO1	Be successfully employed in computing profession as well as multidisciplinary domains in supportive and leadership roles.

PEO2	Participate in life-long learning through successful completion of advanced degrees, continuing education, certifications and/or other professional development.
PEO3	Promote design, research, product implementation and services in the field of Computer Science and Engineering through strong technical, communication and entrepreneurial skills.

M.Tech-Computer Science

Sl.No.	Objective
PEO1	Have a successful career in industry/academia/research/government, induced with fundamental and advanced knowledge in their respective domains.
PEO2	Engage in professional practice to promote the development of novel systems/products and optimized solutions to meet the societal needs.
PEO3	Contribute significantly to contemporary research domains in Computer Science and Engineering through publications, innovative projects or patents.

PhD-PhD in Computer Science

PROGRAM SPECIFIC OUTCOME

B.Tech-Computer Science & Engineering

Sl.No.	Outcome
PSO1	Apply Engineering knowledge to analyze, design and develop computing solutions by employing modern computer languages, environments and platforms that can solve complex problems.
PSO2	Anticipate the changing direction of computational technology, evaluate it and communicate the likely utility of that for building software systems that would perform tasks related to industry, research and education.
PSO3	Inculcate the knowledge of Engineering and Management principles to manage projects effectively and create innovative career paths.

M.Tech-Computer Science

Sl.No.	Outcome
PSO1	Analyze, design & develop components or processes (by using knowledge of algorithms, security , DBMS , Object Oriented Software Engineering, Digital Image Processing, Research Methodology, Network, Artificial Intelligence and Big Data concepts) to evaluate socially relevant issues and provide solutions.

PSO2	Learn and apply appropriate modern techniques and tools to solve complex Computer Science & Engineering problems.
PSO3	Develop software systems that would perform tasks related to Research, Education and Training /E-governance.

PhD-PhD in Computer Science

COMPETENCIES & PERFORMANCE INDICATORS

B.Tech-Computer Science & Engineering

1.1 Demonstrate competence in mathematical modelling

1.1.1 Apply the knowledge of discrete structures, linear algebra, statistics and numerical techniques to solve problems

1.1.2 Apply the concepts of probability, statistics and queuing theory in modeling of computer-based system, data and network protocols.

1.2 Demonstrate competence in basic sciences

1.2.1 Apply laws of natural science to an engineering problem

1.3 Demonstrate competence in engineering fundamentals

1.3.1 Apply engineering fundamentals

1.4 Demonstrate competence in specialized engineering knowledge to the program

1.4.1 Apply theory and principles of computer science and engineering to solve an engineering problem

2.1 Demonstrate an ability to identify and formulate complex engineering problem

2.1.1 Evaluate problem statements and identifies objectives

2.1.2 Identify processes/modules/algorithms of a computer-based system and parameters to solve a problem

2.1.3 Identity mathematical algorithmic knowledge that applies to a given problem

2.2 Demonstrate an ability to formulate a solution plan and methodology for an engineering problem

2.2.1	Reframe the computer-based system into interconnected subsystems
2.2.2	Identity functionalities and computing resources
2.2.3	Identify existing solution/methods to solve the problem, including forming justified approximations and assumptions
2.2.4	Compare and contrast alternative solution/methods to select the best methods
2.2.5	Compare and contrast alternative solution processes to select the best process
2.3	Demonstrate an ability to formulate and interpret a model
2.3.1	Able to apply computer engineering principles to formulate modules of a system with required applicability and performance.
2.3.2	Identity design constraints for required performance criteria
2.4	Demonstrate an ability to execute a solution process and analyze results
2.4.1	Applies engineering mathematics to implement the solution
2.4.2	2 Analyze and interpret the results using contemporary tools
2.4.3	Identify the limitations of the solution and sources/causes
2.4.4	Arrive at conclusions with respect to the objectives.
3.1	Demonstrate an ability to define a complex/open-ended problem in engineering terms
3.1.1	Able to define a precise problem statement with objectives and scope
3.1.2	Able to define a precise problem statement with objectives and scope
3.1.3	Able to review state-of-the-art literature to synthesize system requirements.
3.1.4	Able to choose appropriate quality attributes as defined by ISQ/IEC/IEEE standard
3.1.5	Explore and synthesize system requirements from larger social and professional concerns
3.1.6	Able to develop software requirement specifications (SRS).
3.2	Demonstrate an ability to generate a diverse set of alternative design solutions
3.2.1	Able to explore design alternatives
3.2.2	Able to produce a variety ol potential design solutions suited to meet functional requirements.
3.2.3	Identify suitable non-functional requirements for evaluation of alternate design solutions
3.3	Demonstrate an ability to select optimal design scheme for further development

3.3.1	Able to perform systematic evaluation of the degree to which several design concepts meet the criteria.
3.3.2	Consult with domain experts and stakeholders to select candidate engineering design solution for further development
3.4	Demonstrate an ability to advance an engineering design to defined end state
3.4.1	Able to reline architecture design into a detailed design within the existing constraints
3.4.2	Able to implement and integrate the modules
3.4.3	Able to verify the functionalities and validate the design
4.1	Demonstrate an ability to conduct investigations of technical issues consistent with their level of knowledge and understanding
4.1.1	Define a problem for purposes of investigation, its scope and importance
4.1.2	Able to choose appropriate procedure algorithm, dataset and test cases
4.1.3	Able to choose appropriate hardware/software tools to conduct the experiment.
4.2	Demonstrate an ability to design experiments to solve open-ended problems
4.2.1	Design and develop appropriate procedures/methodologies based on the study objectives
4.3	Demonstrate an ability to analyze data and reach a valid conclusion
4.3.1	Use appropriate procedures, tools and techniques to collect and analyze data
4.3.2	Critically analyze data for trends and correlations, stating possible errors and limitations
4.3.3	Represent data (in tabular and/or graphical forms) so as to facilitate analysis and explanation of the data, and drawing of conclusions
4.3.4	Synthesize information and knowledge about the problem from the raw data to reach appropriate conclusions
5.1	Demonstrate an ability to identify/create modern engineering tools, techniques and sources
5.1.1	Identify modern engineering tools, techniques and resources for engineering activities
5.1.2	Create/ad and tools and techniques to solve engineering problems
5.2	Demonstrate an ability to select and apply discipline-specific tools, techniques and resources
5.2.1	Identify the strengths and limitations of tools for (i) acquiring Information (ii) modeling and simulating, (iii) monitoring system performance, and (iv) resources creating engineering designs.
5.2.2	Demonstrate proficiency in using discipline-specific tools
5.3	Demonstrate an ability to evaluate the suitability and limitations of tools used to solve an engineering problem

5.3.1	Discuss limitations and validate tools, techniques and resources
5.3.2	Verify the credibility of results from tool use with reference to the accuracy and limitations, and the assumptions inherent in their use.
6.1	Demonstrate an ability to describe engineering roles in a broader context, e.g. pertaining to the environment, health, safety, legal and public welfare
6.1.1	Identity and describe various engineering roles: particularly as pertains to protection of the public and public interest at the global, regional and local level
6.2	Demonstrate an understanding of professional engineering regulations, legislation and standards
6.2.1	Interpret legislation, regulations, codes, and standards relevant to your discipline and explain is contribution to the protection of the public
7.1	Demonstrate an understanding of the impact of engineering and industrial practices on social, environmental and in economic contexts
7.1.1	Identity risks/impacts in the life-cycle of an engineering product or activity
7.1.2	Understand the relationship between the technical, socio-economic and environmental dimensions of sustainability
7.2	Demonstrate an ability to apply principles of sustainable design and development
7.2.1	Describe management techniques for sustainable development
7.2.2	Apply principles of preventive engineering and sustainable development to an engineering activity or product relevant to the discipline
8.1	Demonstrate an ability to recognize ethical dilemmas
8.1.1	Identity situations of unethical professional conduct and propose ethical alternatives
8.2	Demonstrate an ability to apply the Code of Ethics
8.2.1	Identify tenets of the ASME professional code of ethics
8.2.2	Examine and apply moral & ethical principles to known case studies
9.1	Demonstrate an ability to form a team and define a role for each member
9.1.1	Recognize a variety of working and learning preferences; appreciate the value of diversity on a team
9.1.2	Implement the norms of practice (eg, rules, roles, charters, agendas, etc.) of effective team work, to accomplish a goal
9.2	Demonstrate effective individual and team operations-- communication, problem-solving, conflict resolution and leadership skills

9.2.1 Demonstrate effective communication, problem-solving, conflict resolution and leadership skills

9.2.2 Treat other team members respectfully

9.2.3 Listen to other members

9.2.4 Maintain composure in difficult situations

9.3 Demonstrate success in a team-based project

9.3.1 Present results as a team with smooth integration of contributions from all individual efforts

10.1 Demonstrate an ability to comprehend technical literature and document project work

10.1.1 Read, understand and interpret technical and non-technical information

10.1.2 Produce clear well-constructed and well-supported written engineering documents

10.1.3 Create flow in a document or presentation - a logical progression of ideas so that the main point is clear

10.2 Demonstrate competence in listening, speaking, and presentation

10.2.1 Listen to and comprehend information, instructions, and viewpoints of others

10.2.2 Deliver effective oral presentations to technical and non-technical audiences

10.3 Demonstrate the ability to integrate different modes of communication

10.3.1 Create engineering standard figures, reports and drawings to complement writing and presentations

10.3.2 Use a variety of media effectively to convey a message in a document or a presentation

11.1 Demonstrate an ability to evaluate the economic and financial performance of an engineering activity

11.1.1 Describe various economic and financial costs/benefits of an engineering activity

11.1.2 Analyze different forms of financial statements to evaluate the financial status of an engineering project

11.2 Demonstrate an ability to compare and contrast the costs/benefits of alternate proposals for an engineering activity

11.2.1 Analyze and select the most appropriate proposal based on economic and financial considerations

11.3 Demonstrate an ability to plan/manage an engineering activity within time and budget constraints

11.3.1 Identity the tasks required to complete an engineering activity and the resources required to complete the tasks

11.3.2 Use project management tools to schedule an engineering project, so it is completed on time and on budget.

12.1 Demonstrate an ability to identity gaps in knowledge and a strategy to close these gaps

12.1.1	Describe the rationale for the requirement for continuing professional development
12.1.2	Identify deficiencies or gaps in knowledge and demonstrate an ability to source information to close this gap

12.2	Demonstrate an ability to identify changing trends in engineering knowledge and practice

12.2.1	Identify historic points of technological advance in engineering that required practitioners to seek education in order to stay current
12.2.2	Recognize the need and be able to clearly explain why it is vitally important to keep current regarding new developments in your field

12.3	Demonstrate an ability to identify and access sources for new information

12.3.1	Source and comprehend technical literature and other credible sources of information
12.3.2	Analyze sourced technical and popular information for feasibility, viability, sustainability, etc

M.Tech-Computer Science

1.1	Demonstrate competence in mathematical modelling

1.1.1	Apply the knowledge of discrete structures, linear algebra, statistics and numerical techniques to solve problems
1.1.2	Apply the concepts of probability, statistics and queuing theory in modeling of computer-based system, data and network protocols.

1.2	Demonstrate competence in basic sciences

1.2.1	Apply laws of natural science to an engineering problem
1.2.1	Apply laws of natural science to an engineering problem

1.3	Demonstrate competence in engineering fundamentals

1.3.1	Apply engineering fundamentals

1.4	Demonstrate competence in specialized engineering knowledge to the program

1.4.1	Apply theory and principles of computer science and engineering to solve an engineering problem

2.1	Demonstrate an ability to identify and formulate complex engineering problem

2.1.1	Evaluate problem statements and identifies objectives
2.1.2	Identify processes/modules/algorithms of a computer-based system and parameters to solve a problem
2.1.3	Identity mathematical algorithmic knowledge that applies to a given problem

2.2	Demonstrate an ability to formulate a solution plan and methodology for an engineering problem
2.2.1	Reframe the computer-based system into interconnected subsystems
2.2.2	Identity functionalities and computing resources
2.2.3	Identify existing solution/methods to solve the problem, including forming justified approximations and assumptions
2.2.4	Compare and contrast alternative solution/methods to select the best methods
2.2.5	Compare and contrast alternative solution processes to select the best process
2.3	Demonstrate an ability to formulate and interpret a model
2.3.1	Able to apply computer engineering principles to formulate modules of a system with required applicability and performance.
2.3.2	Identity design constraints for required performance criteria
2.4	Demonstrate an ability to execute a solution process and analyze results
2.4.1	Applies engineering mathematics to implement the solution
2.4.2	2 Analyze and interpret the results using contemporary tools
2.4.3	Identify the limitations of the solution and sources/causes
2.4.4	Arrive at conclusions with respect to the objectives.
3.1	Demonstrate an ability to define a complex/open-ended problem in engineering terms
3.1.1	Able to define a precise problem statement with objectives and scope
3.1.2	Able to define a precise problem statement with objectives and scope
3.1.3	Able to review state-of-the-art literature to synthesize system requirements.
3.1.4	Able to choose appropriate quality attributes as defined by ISQ/IEC/IEEE standard
3.1.5	Explore and synthesize system requirements from larger social and professional concerns
3.1.6	Able to develop software requirement specifications (SRS).
3.2	Demonstrate an ability to generate a diverse set of alternative design solutions
3.2.1	Able to explore design alternatives
3.2.2	Able to produce a variety ol potential design solutions suited to meet functional requirements.
3.2.3	Identify suitable non-functional requirements for evaluation of alternate design solutions
3.3	Demonstrate an ability to select optimal design scheme for further development

3.3.1	Able to perform systematic evaluation of the degree to which several design concepts meet the criteria.
3.3.2	Consult with domain experts and stakeholders to select candidate engineering design solution for further development
3.4	Demonstrate an ability to advance an engineering design to defined end state
3.4.1	Able to reline architecture design into a detailed design within the existing constraints
3.4.2	Able to implement and integrate the modules
3.4.3	Able to verify the functionalities and validate the design
4.1	Demonstrate an ability to conduct investigations of technical issues consistent with their level of knowledge and understanding
4.1.1	Define a problem for purposes of investigation, its scope and importance
4.1.2	Able to choose appropriate procedure algorithm, dataset and test cases
4.1.3	Able to choose appropriate hardware/software tools to conduct the experiment.
4.2	Demonstrate an ability to design experiments to solve open-ended problems
4.2.1	Design and develop appropriate procedures/methodologies based on the study objectives
4.3	Demonstrate an ability to analyze data and reach a valid conclusion
4.3.1	Use appropriate procedures, tools and techniques to collect and analyze data
4.3.2	Critically analyze data for trends and correlations, stating possible errors and limitations
4.3.3	Represent data (in tabular and/or graphical forms) so as to facilitate analysis and explanation of the data, and drawing of conclusions
4.3.4	Synthesize information and knowledge about the problem from the raw data to reach appropriate conclusions
5.1	Demonstrate an ability to identify/create modern engineering tools, techniques and sources
5.1.1	Identify modern engineering tools, techniques and resources for engineering activities
5.1.2	Create/ad and tools and techniques to solve engineering problems
5.2	Demonstrate an ability to select and apply discipline-specific tools, techniques and resources
5.2.1	Identify the strengths and limitations of tools for (i) acquiring Information (ii) modeling and simulating, (iii) monitoring system performance, and (iv) resources creating engineering designs.
5.2.2	Demonstrate proficiency in using discipline-specific tools
5.3	Demonstrate an ability to evaluate the suitability and limitations of tools used to solve an engineering problem

5.3.1	Discuss limitations and validate tools, techniques and resources
5.3.2	Verify the credibility of results from tool use with reference to the accuracy and limitations, and the assumptions inherent in their use.
6.1	Demonstrate an ability to describe engineering roles in a broader context, e.g. pertaining to the environment, health, safety, legal and public welfare
6.1.1	Identity and describe various engineering roles: particularly as pertains to protection of the public and public interest at the global, regional and local level
6.2	Demonstrate an understanding of professional engineering regulations, legislation and standards
6.2.1	Interpret legislation, regulations, codes, and standards relevant to your discipline and explain is contribution to the protection of the public
7.1	Demonstrate an understanding of the impact of engineering and industrial practices on social, environmental and in economic contexts
7.1.1	Identity risks/impacts in the life-cycle of an engineering product or activity
7.1.2	Understand the relationship between the technical, socio-economic and environmental dimensions of sustainability
7.2	Demonstrate an ability to apply principles of sustainable design and development
7.2.1	Describe management techniques for sustainable development
7.2.2	Apply principles of preventive engineering and sustainable development to an engineering activity or product relevant to the discipline
8.1	Demonstrate an ability to recognize ethical dilemmas
8.1.1	Identity situations of unethical professional conduct and propose ethical alternatives
8.2	Demonstrate an ability to apply the Code of Ethics
8.2.1	Identify tenets of the ASME professional code of ethics
8.2.2	Examine and apply moral & ethical principles to known case studies
9.1	Demonstrate an ability to form a team and define a role for each member
9.1.1	Recognize a variety of working and learning preferences; appreciate the value of diversity on a team
9.1.2	Implement the norms of practice (eg, rules, roles, charters, agendas, etc.) of effective team work, to accomplish a goal
9.2	Demonstrate effective individual and team operations-- communication, problem-solving, conflict resolution and leadership skills

9.2.1 Demonstrate effective communication, problem-solving, conflict resolution and leadership skills

9.2.2 Treat other team members respectfully

9.2.3 Listen to other members

9.2.4 Maintain composure in difficult situations

9.3 Demonstrate success in a team-based project

9.3.1 Present results as a team with smooth integration of contributions from all individual efforts

10.1 Demonstrate an ability to comprehend technical literature and document project work

10.1.1 Read, understand and interpret technical and non-technical information

10.1.2 Produce clear well-constructed and well-supported written engineering documents

10.1.3 Create flow in a document or presentation - a logical progression of ideas so that the main point is clear

10.2 Demonstrate competence in listening, speaking, and presentation

10.2.1 Listen to and comprehend information, instructions, and viewpoints of others

10.2.2 Deliver effective oral presentations to technical and non-technical audiences

10.3 Demonstrate the ability to integrate different modes of communication

10.3.1 Create engineering standard figures, reports and drawings to complement writing and presentations

10.3.2 Use a variety of media effectively to convey a message in a document or a presentation

11.1 Demonstrate an ability to evaluate the economic and financial performance of an engineering activity

11.1.1 Describe various economic and financial costs/benefits of an engineering activity

11.1.2 Analyze different forms of financial statements to evaluate the financial status of an engineering project

11.2 Demonstrate an ability to compare and contrast the costs/benefits of alternate proposals for an engineering activity

11.2.1 Analyze and select the most appropriate proposal based on economic and financial considerations

11.3 Demonstrate an ability to plan/manage an engineering activity within time and budget constraints

11.3.1 Identity the tasks required to complete an engineering activity and the resources required to complete the tasks

11.3.2 Use project management tools to schedule an engineering project, so it is completed on time and on budget.

PhD-PhD in Computer Science

BLOOM'S TAXONOMY FOR ASSESSMENT DESIGN

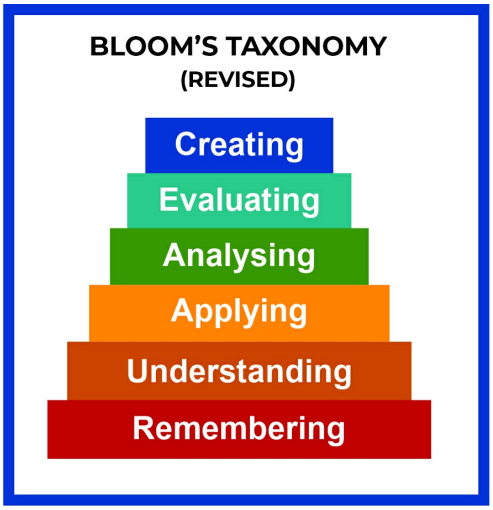


Fig. : Revised Bloom's Taxonomy

Level	Descriptor	Level of attainment
1	Remembering	Recalling from the memory of the previously learned material
2	Understanding	Explaining ideas or concepts
3	Applying	Using the information in another familiar situation
4	Analysing	Breaking information into the part to explore understandings and relationships
5	Evaluating	Justifying a decision or course of action
6	Creating	Generating new ideas, products or new ways of viewing things

Level	Skill Demonstrated	Question cues / Verbs for tests
1. Remember	• Ability to recall of information like facts, conventions, definitions, jargon, technical terms, classifications, categories, and criteria • ability to recall methodology and procedures, abstractions, principles, and theories in the field • knowledge of dates, events, places • mastery of subject matter	list, define, tell, describe, recite, recall, identify, show, label, tabulate, quote, name, who, when, where
2. Understand	• understanding information • grasp meaning • translate knowledge into new context • interpret facts, compare, contrast • order, group, infer causes • predict consequences	describe, explain, paraphrase, restate, associate, contrast, summarize, differentiate interpret, discuss
3. Apply	• use information • use methods, concepts, laws, theories in new situations • solve problems using required skills or knowledge • Demonstrating correct usage of a method or procedure	calculate, predict, apply, solve, illustrate, use, demonstrate, determine, model, experiment, show, examine, modify
4. Analyse	• break down a complex problem into parts • Identify the relationships and interaction between the different parts of a complex problem • identify the missing information, sometimes the redundant information and the contradictory information, if any	classify, outline, break down, categorize, analyze, diagram, illustrate, infer, select
5. Evaluate	• compare and discriminate between ideas • assess value of theories, presentations • make choices based on reasoned argument • verify value of evidence • recognize subjectivity • use of definite criteria for judgments	assess, decide, choose, rank, grade, test, measure, defend, recommend, convince, select, judge, support, conclude, argue, justify, compare, summarize, evaluate
6. Create	• use old ideas to create new ones • Combine parts to make (new) whole, • generalize from given facts • relate knowledge from several areas • predict, draw conclusions	design, formulate, build, invent, create, compose, generate, derive, modify, develop, integrate

TEACHING - LEARNING STRATEGIES

1. BLENDED LEARNING
2. BRAINSTORMING
3. CASE STUDY
4. COMPUTER AIDED PRESENTATION
5. COMPUTER LABS/LAPTOP INSTRUCTION
6. DEMONSTRATION
7. DIRECT INSTRUCTION
8. DISCOVERY LEARNING
9. DISCUSSION
10. DRILL AND PRACTICE
11. EXAMINATION
12. FLIPPED CLASS
13. FULLY ONLINE INSTRUCTION
14. GROUP ACTIVITIES
15. INQUIRY
16. LECTURE
17. MENTAL MODELING
18. MOOC ONLINE
19. PROJECT DEVELOPMENT
20. PROJECT PRESENTATION
21. QUESTION AND ANSWER
22. ROLE PLAY
23. SELF-LEARNING
24. SEMINAR
25. TUTORIAL
26. WEB-ENHANCED LEARNING

PO-CA-PI MAPPING SUMMARY

B.Tech-Computer Science & Engineering

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
No CAs	4	4	4	3	3	2	2	2	3	3	3	3
No PIs	5	14	14	8	6	2	4	3	7	7	5	6

M.Tech-Computer Science

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
No CAs	4	4	4	3	3	2	2	2	3	3	3
No PIs	6	14	14	8	6	2	4	3	7	7	5

PhD-PhD in Computer Science

PEO-PO MAPPING

Correlation Levels: 1: Slight (Low), 2: Moderate (Medium), 3: Substantial (High), empty – no correlation

B.Tech-Computer Science & Engineering

PEO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
PEO1	2	2	3	1	3	2	3	3	3	3	3	1
PEO2	3	2	2	2	3	2	3	2	1	2	2	3
PEO3	3	3	3	3	3	2	2	3	3	3	3	3

M.Tech-Computer Science

PEO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
PEO1											
PEO2											
PEO3											

PhD-PhD in Computer Science

PEO-MISSION MAPPING

B.Tech-Computer Science & Engineering

PEO/MISSION	MS1	MS2	MS3	MS4
PEO1	3	3	1	2
PEO2	3	3	2	1

PEO3	3	3	3	2

M.Tech-Computer Science

PEO/MISSION	MS1	MS2	MS3	MS4
PEO1				
PEO2				
PEO3				

PhD-PhD in Computer Science

PROGRAM EXIT SURVEY

B.Tech-Computer Science & Engineering

Sl.No.	The extent to which engineering education has enhanced your ability to:
1	Apply the knowledge of mathematics, physics, chemistry and basic engineering to solve Engineering problems
	Very Strong,Strong,Average,weak ,Very Weak
2	Identify, formulate and analyze complex Engineering problems and derive meaningful conclusions using principles of mathematics, science and engineering
	Very Strong,Strong,Average,weak ,Very Weak
3	Design efficient processes and develop high quality products giving due consideration to safety, environmental issues and economic aspects
	Very Strong,Strong,Average,weak ,Very Weak
4	Conduct investigation of complex Engineering problems using research based methods, analyze and interpret data to draw valid conclusions
	Very Strong,Strong,Average,weak ,Very Weak
5	Acquire skills to select and use modern engineering tools and software for modeling, simulation and solution of complex Engineering problems
	Very Strong,Strong,Average,weak ,Very Weak
6	Apply contextual knowledge to assess societal, health, safety, legal and cultural issues in professional practice to become a responsible engineer

	Very Strong,Strong,Average,weak ,Very Weak
7	Understand the societal and environmental impacts of applying Engineering to solve real life problems and practice sustainable development
	Very Strong,Strong,Average,weak ,Very Weak
8	Work with full commitment to professional and ethical responsibilities as an engineer
	Very Strong,Strong,Average,weak ,Very Weak
9	Work individually in a team or as a leader in any demanding or challenging environment
	Very Strong,Strong,Average,weak ,Very Weak
10	Communicate effectively with engineering community or the society at large through appropriate reports, designs, presentations and instructions
	Very Strong,Strong,Average,weak ,Very Weak
11	Engage in life-long learning in the broadest context of developments in technology for continuous professional development
	Very Strong,Strong,Average,weak ,Very Weak
12	Understand engineering and management principles and apply these to manage multidisciplinary projects and finance as an individual or as a member or leader of a team
	Very Strong,Strong,Average,weak ,Very Weak
13	To what extend are you able to apply Engineering knowledge to analyze, design and develop computing solutions by employing modern computer languages, environments and platforms that can solve complex problems?
	Excellent,Very good,Good,Satisfactory,Poor
14	To what extend are you able to anticipate the changing direction of computational technology, evaluate it and communicate the likely utility of that for building software systems that would perform tasks related to industry, research and education.
	Excellent,Very good,Good,Fair,Poor
15	To what extend are you able to Inculcate the knowledge of Engineering and Management principles to manage projects effectively and create innovative career paths.

	Excellent,Very good,Good,Fair,Poor

M.Tech-Computer Science

Sl.No.	The extent to which engineering education has enhanced your ability to:
1	Apply the knowledge of mathematics, physics, chemistry and basic engineering to solve Engineering problems
	Very Strong,Strong,Average,weak ,Very Weak
2	Identify, formulate and analyze complex Engineering problems and derive meaningful conclusions using principles of mathematics, science and engineering
	Very Strong,Strong,Average,weak ,Very Weak
3	Design efficient processes and develop high quality products giving due consideration to safety, environmental issues and economic aspects
	Very Strong,Strong,Average,weak ,Very Weak
4	Conduct investigation of complex Engineering problems using research based methods, analyze and interpret data to draw valid conclusions
	Very Strong,Strong,Average,weak ,Very Weak
5	Acquire skills to select and use modern engineering tools and software for modeling, simulation and solution of complex Engineering problems
	Very Strong,Strong,Average,weak ,Very Weak
6	Apply contextual knowledge to assess societal, health, safety, legal and cultural issues in professional practice to become a responsible engineer
	Very Strong,Strong,Average,weak ,Very Weak
7	Understand the societal and environmental impacts of applying Engineering to solve real life problems and practice sustainable development
	Very Strong,Strong,Average,weak ,Very Weak
8	Work with full commitment to professional and ethical responsibilities as an engineer

	Very Strong,Strong,Average,weak ,Very Weak
9	Work individually in a team or as a leader in any demanding or challenging environment
	Very Strong,Strong,Average,weak ,Very Weak
10	Communicate effectively with engineering community or the society at large through appropriate reports, designs, presentations and instructions
	Very Strong,Strong,Average,weak ,Very Weak
11	Engage in life-long learning in the broadest context of developments in technology for continuous professional development
	Very Strong,Strong,Average,weak ,Very Weak
12	Understand engineering and management principles and apply these to manage multidisciplinary projects and finance as an individual or as a member or leader of a team
	Very Strong,Strong,Average,weak ,Very Weak

PhD-PhD in Computer Science

Sl.No.	The extent to which engineering education has enhanced your ability to:
1	Apply the knowledge of mathematics, physics, chemistry and basic engineering to solve Engineering problems
	Very Strong,Strong,Average,weak ,Very Weak
2	Identify, formulate and analyze complex Engineering problems and derive meaningful conclusions using principles of mathematics, science and engineering
	Very Strong,Strong,Average,weak ,Very Weak
3	Design efficient processes and develop high quality products giving due consideration to safety, environmental issues and economic aspects
	Very Strong,Strong,Average,weak ,Very Weak
4	Conduct investigation of complex Engineering problems using research based methods, analyze and interpret data to draw valid conclusions
	Very Strong,Strong,Average,weak ,Very Weak

5	Acquire skills to select and use modern engineering tools and software for modeling, simulation and solution of complex Engineering problems
	Very Strong,Strong,Average,weak ,Very Weak
6	Apply contextual knowledge to assess societal, health, safety, legal and cultural issues in professional practice to become a responsible engineer
	Very Strong,Strong,Average,weak ,Very Weak
7	Understand the societal and environmental impacts of applying Engineering to solve real life problems and practice sustainable development
	Very Strong,Strong,Average,weak ,Very Weak
8	Work with full commitment to professional and ethical responsibilities as an engineer
	Very Strong,Strong,Average,weak ,Very Weak
9	Work individually in a team or as a leader in any demanding or challenging environment
	Very Strong,Strong,Average,weak ,Very Weak
10	Communicate effectively with engineering community or the society at large through appropriate reports, designs, presentations and instructions
	Very Strong,Strong,Average,weak ,Very Weak
11	Engage in life-long learning in the broadest context of developments in technology for continuous professional development
	Very Strong,Strong,Average,weak ,Very Weak
12	Understand engineering and management principles and apply these to manage multidisciplinary projects and finance as an individual or as a member or leader of a team
	Very Strong,Strong,Average,weak ,Very Weak

ALUMNI SURVEY

Objective: Collect alumni views to help us improve our programs and assess the effectiveness of Outcome based education framework adopted here.

Sl.No.	Question
1	Name

2	Organization
3	Qualification secured from Amal Jyothi College of Engineering (AJCE)
4	Year of Graduation from AJCE
5	E-mail ID
6	Mobile No
7	Present Status
	[Employed/ Entrepreneur/ Pursuing higher studies/ Working at home/ Other]
8	Present Employment level
	[High managerial/ Middle Managerial /Low Managerial/ Non-managerial/Other]
9	Number of Years of experience at the present level
	[above 10/ between 5 and 10/ between 2 and 5/ between 1 and 2/ less than 1]
10	Is your present job in the core area of Engineering you have studied?
	[very much/ strongly related / weakly related/ not at all related/ no relation to engineering at all]
11	How well have you been able to apply your knowledge of Mathematics, Science and Engineering fundamentals for the solution of engineering problems in your work?
	[very well/ somewhat well / rarely well/ not at all/ not applicable]
12	How well have you been able to identify, formulate and analyze complex Engineering problems and derive meaningful conclusions using principles of mathematics, science and engineering in your work?
	[very well/ somewhat well / rarely well/ not at all/ not applicable]
13	How well have you been able to design efficient processes and develop high quality products giving due consideration to safety, environmental issues and economic aspects?
	[very well/ somewhat well / rarely well/ not at all/ not applicable]
14	How well have you been able to conduct investigation of complex Engineering problems using research based methods, analyze and interpret data to draw valid conclusions?
	[very well/ somewhat well / rarely well/ not at all/ not applicable]

15	How well have you been able to select and use modern engineering tools and software for modeling, simulation and solution of complex Engineering problems?
	[very well/ somewhat well / rarely well/ not at all/ not applicable]
16	How well have you been able to apply contextual knowledge to assess societal, health, safety, legal and cultural issues in your professional practice as a responsible engineer?
	[very well/ somewhat well / rarely well/ not at all/ not applicable]
17	How well have you been able to understand the societal and environmental impacts of applying Engineering to solve real life problems and practice sustainable development?
	[very well/ somewhat well / rarely well/ not at all/ not applicable]
18	How well have you been able to work with full commitment to your professional and ethical responsibilities as an engineer?
	[very well/ somewhat well / rarely well/ not at all/ not applicable]
19	How well have you been able to work successfully as an individual, in a team or as a team leader in any demanding or challenging environment?
	[very well/ somewhat well / rarely well/ not at all/ not applicable]
20	How well have you been able to communicate effectively through written and oral modes to all levels of stakeholders in society?
	[very well/ somewhat well / rarely well/ not at all/ not applicable]
21	How well have you been engaging yourself in life-long learning in the broadest context of developments in technology for continuous professional development?
	[very well/ somewhat well / rarely well/ not at all/ not applicable]
22	How well have you been able to apply engineering and management principles to manage multidisciplinary projects as an individual or as a team member or team leader?
	[very well/ somewhat well / rarely well/ not at all/ not applicable]
23	To what extent do you think you are able to apply your technical knowledge and take on higher responsibilities in industry, academics and diverse fields of your engineering specialization?
	[very well/ somewhat well / rarely well/ not at all/ not applicable]
24	How far you are in a position to pursue continual path of professional development, interspersed with advanced education and continuing enhancement programs, relevant to your specific career goals?

	[very well/ somewhat well / rarely well/ not at all/ not applicable]
25	How far you are able to channelize your knowledge base, business links and social contacts into socially beneficial activities?
	[very well/ somewhat well / rarely well/ not at all/ not applicable]
26	How far you able to provide effective and efficient real time solutions to Engineering problems in your area, based on acquired knowledge so as to empower industry and society?
	[very well/ somewhat well / rarely well/ not at all/ not applicable]
27	How far you are able to enhance research skills to develop sustainable solutions to Complex Engineering problems in your area of work?
	[very well/ somewhat well / rarely well/ not at all/ not applicable]
28	How far you have acquired managerial skills and ethical values to develop yourself as a true leader and team player?
	[very well/ somewhat well / rarely well/ not at all/ not applicable]
29	Other suggestions, if any:

EMPLOYER SURVEY

Objective: Collect the views of Employers of our Graduates to help us improve our programs and assess the effectiveness of Outcome based education framework practiced here.

Sl.No.	Question
1	Name of the Company/Organization
2	Name of the person responding to this Survey
3	Address
4	E-mail ID
5	Mobile No
6	Present Status (Title/Designation)
7	No. of years of Experience in the Company/Organization
8	Please, indicate the Professional Background of the person responding to this survey

9	Please indicate the number of Alumni employed by your Company/ Organization, who have graduated from Amal Jyothi College of Engineering (AJCE), who are considered for this Survey
10	How do you rate the level of engineering knowledge of our Graduate(s)?
	[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]
11	How do you evaluate the technical competence/skills of our Graduate (s)?
	[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]
12	How do you feel the Graduate(s) of AJCE were trained properly for carrying out the work in your company/ organization?
	[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]
13	How effectively can he/she use modern engineering tools to solve problems connected with his/her assigned work?
	[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]
14	Can the Graduate(s) work effectively as an individual or in a team to accomplish a common goal for the company/organization?
	[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]
15	How far the Graduate(s) is/are able to lead a team of technical personnel to accomplish a given task for the company/organization?
	[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]
16	How well the Graduate(s) can work in a collaborative multidisciplinary professional work group in your organization?
	[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]
17	How active Is/are the Graduate(s) as a member(s) of any professional society or organization?
	[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]
18	How far the Graduate is interested to enhance his/her professional skills by attending short courses/ workshops, training programs or conferences/ meetings?
	[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]
19	How far the Graduate is interested in enhancing his qualifications by enrolling for higher Degrees, like M Tech., MBA, Ph D etc.?

	[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]
20	How satisfied are you with the communication skills of our Graduate(s)?
	[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]
21	How far our Graduate(s) have the technical skills to design, develop, implement and modify integrated projects in the field of his/her engineering specialization?
	[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]
22	How do you rate the level of his/her integrity/adherence to ethical principles in his work?
	[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]
23	How do you rate his/her efficiency to manage finance related matters in your company/organization?
	[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]
24	How do you rate his/her concerns and awareness for environmental issues and sustainable development?
	[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]
25	Overall, how well satisfied are you with the performance of the AJCE Graduate(s)?
	[Excellent/ Good / Fair/ Needs improvement/ Not up to the mark]
25	Suggestions, if any, for molding our Graduates as still better engineers

COURSE OUTCOMES

B.Tech-Computer Science & Engineering

SEMESTER-1

MA101

Course Code	Course Name	L-T-P:C	Year of Introduction
MA101	CALCULUS	3-1-0:4	2016

No.	Course Outcome - MA101 - CALCULUS	Target
CO1	Apply the concept of convergence of infinite series to solve Engineering problems	60%
CO2	Apply the concept of maxima and minima of functions of two variables to solve Engineering problems	60%

CO3	Apply calculus of vector-valued functions to dynamical quantities like velocity and acceleration	60%
CO4	Identify and use Multiple Integrals to evaluate surface area and volume	60%
CO5	Apply the concepts of Divergence and Curl to solve Engineering problems	60%
CO6	Demonstrate the application of vector calculus theorems to evaluate different integrals	60%

COURSE END SURVEY - MA101 - CALCULUS

Sl.No	Questions & Options
CO1	To what extent you are able to apply the concept of convergence of infinite series to solve Engineering problems
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	To what extent you are able to apply the concept of maxima and minima of functions of two variables to solve Engineering problems
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	To what extent you are able to apply calculus of vector-valued functions to dynamical quantities like velocity and acceleration
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	To what extent you are able to identify and use Multiple Integrals to evaluate surface area and volume
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	To what extent you are able to extent apply the concepts of Divergence and Curl to solve Engineering problems
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO6	To what extent you are able to demonstrate the application of vector calculus theorems to evaluate different integrals
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - MA101 - CALCULUS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3						2	2	2
CO2	3	3	3	3						2	2	2
CO3	3	3	3	3						2	2	2
CO4	3	3	3	3						2	2	2
CO5	3	3	3	3						2	2	2
CO6	3	3	3	3						2	2	2

CO->PSO MAPPING - MA101 - CALCULUS

CO/PSO	PSO1	PSO2	PSO3

CO1	2		
CO2	2	2	
CO3	2	1	
CO4	2		
CO5	2		
CO6	2		

COURSE->PO MAPPING - MA101 - CALCULUS

MA101/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3						2	2	2

COURSE->PSO MAPPING - MA101 - CALCULUS

MA101/PSO	PSO1	PSO2	PSO3
	2	2	

PH100

Course Code	Course Name	L-T-P:C	Year of Introduction
PH100	Engineering Physics	3-1-0:4	2016

No.	Course Outcome - PH100 - Engineering Physics	Target
CO1	Analyse different phenomena associated with the generation and propagation of oscillations and waves	65%
CO2	Demonstrate wave-like phenomena associated with light and use them to measureits properties	60%
CO3	Illustrate the phenomenon of superconductivity and evaluate the properties of the superconducting state	65%
CO4	Identify the features of quantum and statistical phenomena and demonstrate the dynamics of microscopic entities.	65%
CO5	Describe the production and properties of acoustic and ultrasonic waves and demonstrate their applications.	65%
CO6	Outline the construction and properties of different lasers and optoelectronic devices, and identify their applications	65%

COURSE END SURVEY - PH100 - Engineering Physics

Sl.No	Questions & Options
CO1	To what extent you are able to Analyse different phenomena associated with the generation and propagation of oscillations and waves?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO2	To what extent you are able to Demonstrate wave-like phenomena associated with light and use them to measureits properties
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	To what extent you are able to Illustrate the phenomenon of superconductivity and evaluate the properties of the superconducting state
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	To what extent you are able to Identify the features of quantum and statistical phenomena and demonstrate the dynamics of microscopic entities.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	To what extent you are able to Describe the production and properties of acoustic and ultrasonic waves and
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO6	To what extent you are able to Outline the construction and properties of different lasers and optoelectronic devices, and identify their applications
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - PH100 - Engineering Physics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2									2
CO2	3	2	2									
CO3	3	2	2									
CO4	3	2	2									
CO5	3	2	2									
CO6	3	2	1		1							

CO->PSO MAPPING - PH100 - Engineering Physics

CO/PSO	PSO1	PSO2	PSO3
CO1	1	2	
CO2	3	2	
CO3	2	2	
CO4	2	2	
CO5	2	1	
CO6	2		

COURSE->PO MAPPING - PH100 - Engineering Physics

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

PH100/PO	3	2	2		1							2

COURSE->PSO MAPPING - PH100 - Engineering Physics

PH100/PSO	PSO1	PSO2	PSO3
	3	2	

BE100

Course Code	Course Name	L-T-P:C	Year of Introduction
BE100	Engineering Mechanics	3-1-0:4	2016

No.	Course Outcome - BE100 - Engineering Mechanics	Target
CO1	Analyse reactions of various supports under equilibrium	55%
CO2	Determine the forces in planar and spatial systems	55%
CO3	Comprehend the properties of planes and solids	55%
CO4	Determine friction under static conditions	55%
CO5	Identify basic concepts of dynamic problems	55%

COURSE END SURVEY - BE100 - Engineering Mechanics

Sl.No	Questions & Options
CO1	To what extent you are able to analyse reactions of various supports under equilibrium?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO2	To what extent you are able to determine the forces in planar and spatial systems?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO3	To what extent you are able to comprehend the properties of planes and solids?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO4	To what extent you are able to determine friction under static conditions?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO5	To what extent you are able to identify basic concepts of dynamic problems?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*

CO->PO MAPPING - BE100 - Engineering Mechanics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2	2							

CO2	3	3	3	3								
CO3	3	3	2	2	2							
CO4	3	3	3	3	2							
CO5	3	3	2	2	2							

CO->PSO MAPPING - BE100 - Engineering Mechanics

CO/PSO	PSO1	PSO2	PSO3
CO1	2		
CO2	1		
CO3	1		
CO4	2		
CO5	1		

COURSE->PO MAPPING - BE100 - Engineering Mechanics

BE100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	2							

COURSE->PSO MAPPING - BE100 - Engineering Mechanics

BE100/PSO	PSO1	PSO2	PSO3
	2		

BE10105

Course Code	Course Name	L-T-P:C	Year of Introduction
BE10105	Introduction to computing and problem solving	2-1-0:3	2016

COURSE END SURVEY - BE10105 - Introduction to computing and problem solving
CO->PO MAPPING - BE10105 - Introduction to computing and problem solving

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - BE10105 - Introduction to computing and problem solving

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - BE10105 - Introduction to computing and problem solving

BE10105/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	1	2	1	2					

COURSE->PSO MAPPING - BE10105 - Introduction to computing and problem solving

BE10105/PSO	PSO1	PSO2	PSO3

BE10105

Course Code	Course Name	L-T-P:C	Year of Introduction
BE10105	Introduction to computing and problem solving	2-1-0:3	2016

No.	Course Outcome - BE10105 - Introduction to computing and problem solving	Target
CO1	Identify and explain the basics of digital computers	56%
CO2	Analyze and develop different problem solving skills	52%
CO3	Design basic python programs using programming fundamentals like variables,expressions and functions.	52%
CO4	Design programs with interactive input and output, utilizing programming constructs like control and looping statements.	53%
CO5	Develop python programs to solve problems with list and sequence data.	53%
CO6	Design programs using file input and output	52%

COURSE END SURVEY - BE10105 - Introduction to computing and problem solving

Sl.No	Questions & Options
CO1	To what extend you are able to identify and explain the basics of digital computers?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	How far you are able to analyze and develop different problem solving skills?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	To what extend you are able to illustrate algorithms as python program?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	To what extend you are able to design programs with interactive input and output, utilising arithmetic expressions and arrays?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	To what extend you are able to develop recursive programs?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO6	To what extend you are able to design programs using file input and output?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - BE10105 - Introduction to computing and problem solving

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO1	3											2
CO2	3	3	3	2	3					2	3	3
CO3	3	2	3		3				2	2	2	3
CO4	3	3	3	3	3				3	2	3	3
CO5	3	3	3	3	3				3		3	3
CO6	3	3	3	2	3				3		3	2

CO->PSO MAPPING - BE10105 - Introduction to computing and problem solving

CO/PSO	PSO1	PSO2	PSO3
CO1		1	
CO2	3	2	2
CO3	3	3	3
CO4	3	3	3
CO5	3	3	3
CO6	3	3	3

COURSE->PO MAPPING - BE10105 - Introduction to computing and problem solving

BE10105/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3				3	2	3	3

COURSE->PSO MAPPING - BE10105 - Introduction to computing and problem solving

BE10105/PSO	PSO1	PSO2	PSO3
	3	3	3

BE103

Course Code	Course Name	L-T-P:C	Year of Introduction
BE103	Introduction to Sustainable Engineering	2-0-1:3	2016

No.	Course Outcome - BE103 - Introduction to Sustainable Engineering	Target
CO1	Explain the role of engineering in sustainable development and environmental protection	60%
CO2	Describe global environmental issues and the consequent threats to sustainable development	61%
CO3	Apply simple, efficient and indigenous solutions to assess and overcome threats to sustainability	60%
CO4	Identify and apply engineering methods and eco-friendly solutions to maintain a green environment	60%

CO5	Demonstrate the relevance of non-conventional energy sources for sustainable development of the society	61%
CO6	Recognize the role of technology in the sustainable development of society and industry	61%

COURSE END SURVEY - BE103 - Introduction to Sustainable Engineering

Sl.No	Questions & Options
CO1	To what extent are you able to explain the role of engineering in sustainable development and environmental protection
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	To what extent are you able to describe global environmental issues and the consequent threats to sustainable development
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	To what extent are you able to apply simple, efficient and indigenous solutions to assess and overcome threats to sustainability
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	To what extent are you able to Identify and apply engineering methods and eco-friendly solutions to maintain a green environment
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	To what extent are you able to demonstrate the relevance of non-conventional energy sources for sustainable development of the society
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO6	To what extent are you able to recognize the role of technology in the sustainable development of society and industry
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - BE103 - Introduction to Sustainable Engineering

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2					3	3	3		2		2
CO2	2	3	3			3	3	3	2	2		3
CO3	3	3	3	3	2	3	3	2				2
CO4	3	3	3		2	3	3	3	2		3	2
CO5	2				3	3	3					
CO6	3				2	3	3	3				

CO->PSO MAPPING - BE103 - Introduction to Sustainable Engineering

CO/PSO	PSO1	PSO2	PSO3
CO1			2

CO2			2
CO3	2	2	2
CO4	3	2	2
CO5			2
CO6	1	1	1

COURSE->PO MAPPING - BE103 - Introduction to Sustainable Engineering

BE103/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	3	3	3	2	2	3	3

COURSE->PSO MAPPING - BE103 - Introduction to Sustainable Engineering

BE103/PSO	PSO1	PSO2	PSO3
	3	2	2

PH110

Course Code	Course Name	L-T-P:C	Year of Introduction
PH110	Engineering Physics Lab	0-0-2:1	2016

No.	Course Outcome - PH110 - Engineering Physics Lab	Target
CO1	Measure basic physical quantities, such as voltage, frequency, temperature etc and evaluate measurement accuracy.	70%
CO2	Measure and analyse the properties of electrical and acoustic waves and oscillations, and demonstrate resonance.	70%
CO3	Demonstrate wave-like properties of light and measure the wavelength of monochromatic light sources	70%
CO4	Illustrate the propagation of light through an optical fibre and measure its numerical aperture	70%
CO5	Demonstrate the working of devices such as solar cells and photoelectric cells	70%
CO6	Organize an experimental set up and measure fundamental constants such as the Planck's constant.	70%

COURSE END SURVEY - PH110 - Engineering Physics Lab

Sl.No	Questions & Options
CO1	To what extent you are able to Measure basic physical quantities, such as voltage, frequency, temperature etc and evaluate measurement accuracy.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO2	To what extent you are able to Measure and analyse the properties of electrical and acoustic waves and oscillations, and demonstrate resonance.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	To what extent you are able to Demonstrate wave-like properties of light and measure the wavelength of monochromatic light sources
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	To what extent you are able to Illustrate the propagation of light through an optical fibre and measure its numerical aperture
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	To what extent you are able to Demonstrate the working of devices such as solar cells and photoelectric cells
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO6	To what extent you are able to Organize an experimental set up and measure fundamental constants such as the Planck's constant.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - PH110 - Engineering Physics Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2		2	2				2	2		
CO2	3	3		2	2				2	2		
CO3	3	3		2	2				2	2		
CO4	3	3		2	2				2	2		
CO5	3	2		2	2				2	2		
CO6	2	3		2	3				2	2		

CO->PSO MAPPING - PH110 - Engineering Physics Lab

CO/PSO	PSO1	PSO2	PSO3
CO1			
CO2	2	1	
CO3			
CO4	3	1	
CO5	3	1	
CO6			

COURSE->PO MAPPING - PH110 - Engineering Physics Lab

PH110/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

	3	3		2	3				2	2		

COURSE->PSO MAPPING - PH110 - Engineering Physics Lab

PH110/PSO	PSO1	PSO2	PSO3
	3	1	

EE100

Course Code	Course Name	L-T-P:C	Year of Introduction
EE100	Basics of Electrical Engineering	2-1-0:3	2016

No.	Course Outcome - EE100 - Basics of Electrical Engineering	Target
CO1	Summarize the basics of electrical engineering applied to various engineering problems	60%
CO2	Perform mathematical analysis of electric circuits and its power measurement	60%
CO3	Illustrate the basics of magnetism and apply it to electric machines	60%
CO4	Assess the basic structure of machines and power systems	60%
CO5	Evaluate the basic circuits and machines used in real world	60%

COURSE END SURVEY - EE100 - Basics of Electrical Engineering

Sl.No	Questions & Options
CO1	Are you able to solve basics electrical engineering problems
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO2	To what extent you are able to perform mathematical analysis of electric circuits and its power measurement
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	To what extent can you solve basic magnetic circuit problems?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	To what extent you are able to assess the basic structure of machines and power systems
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	Are you able to evaluate the basic circuits and machines used in real world
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - EE100 - Basics of Electrical Engineering

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3					2						3

CO2	3	3	3	2								2
CO3	3	2	2									
CO4	3			2	2							
CO5	3	3				2						3

CO->PSO MAPPING - EE100 - Basics of Electrical Engineering

CO/PSO	PSO1	PSO2	PSO3
CO1	2	2	2
CO2	3	2	1
CO3	2	2	
CO4	2	1	
CO5	3	2	2

COURSE->PO MAPPING - EE100 - Basics of Electrical Engineering

EE100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	2	2	2						3

COURSE->PSO MAPPING - EE100 - Basics of Electrical Engineering

EE100/PSO	PSO1	PSO2	PSO3
	3	2	2

CY100

Course Code	Course Name	L-T-P:C	Year of Introduction
CY100	Engineering Chemistry	3-1-0:4	2016

No.	Course Outcome - CY100 - Engineering Chemistry	Target
CO1	Demonstrate the principles of spectroscopy and apply them to explain chemical phenomena	0%
CO2	Illustrate principles and applications of various electrochemical techniques and cells.	60%
CO3	Discuss instrumental methods like chromatography, conductivity and thermal analysis for chemical analysis.	60%
CO4	Recognize the properties and applications of engineering materials, such as polymers and nanomaterials	60%
CO5	Evaluate the properties of complex chemicals such as fuels and lubricants.	60%
CO6	Describe the properties of water and identify methods for water purification	60%

COURSE END SURVEY - CY100 - Engineering Chemistry

Sl.No	Questions & Options
CO1	To what extent you are able to demonstrate the principles of spectroscopy and apply them to explainchemical phenomena
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	To what extent you are able to Illustrate principles and applications of various electrochemical techniques and cells.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	To what extent you are able to discuss instrumental methods like chromatography, conductivity and thermal analysis for chemical analysis.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	To what extent you are able to recognize the properties and applications of engineering materials, such as polymers and nanomaterials
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	To what extent you are able to evaluate the properties of complex chemicals such as fuels and lubricants.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO6	To what extent you are able to describe the properties of water and identify methods for water purification
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - CY100 - Engineering Chemistry

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2	3	3	3					3
CO2	3	3	2		3							
CO3	3	3	2		3			2				
CO4	3	2	2	2	3							
CO5	3		2		3	3	3	3				
CO6	3		2			3	2					2

CO->PSO MAPPING - CY100 - Engineering Chemistry

CO/PSO	PSO1	PSO2	PSO3
CO1		2	
CO2			2
CO3		2	
CO4		3	
CO5			1

CO6			1

COURSE->PO MAPPING - CY100 - Engineering Chemistry

CY100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	2	2	3	3	3	3				3

COURSE->PSO MAPPING - CY100 - Engineering Chemistry

CY100/PSO	PSO1	PSO2	PSO3
		3	2

BE110

Course Code	Course Name	L-T-P:C	Year of Introduction
BE110	Engineering Graphics	1-1-2:3	2016

No.	Course Outcome - BE110 - Engineering Graphics	Target
CO1	Demonstrate Engineering Drawing Standards (as per BIS), dimensioning and preparation of drawings leading to illustration of Graphics as the communication language of Engineers	60%
CO2	Interpret engineering drawings, leading to enhanced presentation skills of 3-D objects in 2-D plane / paper and improved visualization of physical objects.	60%
CO3	Apply the principles of orthographic projections of lines, solids and sectioned views in the design of pipeline systems.	60%
CO4	Prepare isometric and perspective projections that help to reconstruct solutions to real-time engineering problems in 3D to provide better understanding	60%
CO5	Create surface development and generate projections of penetrated objects which will help to develop suitable models for industrial applications.	60%
CO6	Recognize the importance of CAD software, and develop AutoCAD skills to transfer technical data and sketches into electronic drawing.	60%

COURSE END SURVEY - BE110 - Engineering Graphics

Sl.No	Questions & Options
CO1	To what extent you are able to demonstrate Engineering Drawing Standards (as per BIS), dimensioning and preparation of drawings leading to illustration of Graphics as the communication language of Engineers?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	To what extent you are able to interpret engineering drawings, leading to enhanced presentation skills of 3-D objects in 2-D plane / paper and improved visualization of physical objects?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	To what extent you are able to apply the principles of orthographic projections of lines, solids and sectioned views in the design of pipeline systems?

	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	To what extent you are able to prepare isometric and perspective projections that help to reconstruct solutions to real-time engineering problems in 3D to provide better understanding?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	To what extent you are able to create surface development and generate projections of penetrated objects which will help to develop suitable models for industrial applications?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO6	To what extent you are able to recognize the importance of CAD software, and develop AutoCAD skills to transfer technical data and sketches into electronic drawing?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - BE110 - Engineering Graphics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3									3
CO2	2	2	2							2		2
CO3	2	2						2		2		2
CO4	2	2	3		2			2		2		2
CO5	2	2	2							2		
CO6	3	2	2		3					2	2	2

CO->PSO MAPPING - BE110 - Engineering Graphics

CO/PSO	PSO1	PSO2	PSO3
CO1	2		
CO2	2		
CO3	2		
CO4	2		
CO5	2		
CO6	3	2	

COURSE->PO MAPPING - BE110 - Engineering Graphics

BE110/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	3		3			2		2	2	3

COURSE->PSO MAPPING - BE110 - Engineering Graphics

BE110/PSO	PSO1	PSO2	PSO3
	3	2	

CY110

Course Code	Course Name	L-T-P:C	Year of Introduction
CY110	Engineering Chemistry Lab	0-0-2:1	2016

No.	Course Outcome - CY110 - Engineering Chemistry Lab	Target
CO1	Analyse and measure the quality of water and environmental pollution.	65%
CO2	Analyse and identify unknown compounds from spectral measurements.	65%
CO3	Prepare different polymers for industrial applications.	65%
CO4	Find the strength and pH of unknown solutions using different instrumental methods.	65%
CO5	Measure the percentage of metal present in metal ore.	65%
CO6	Apply and demonstrate theoretical concepts of Engineering Chemistry.	65%

COURSE END SURVEY - CY110 - Engineering Chemistry Lab

Sl.No	Questions & Options
CO1	To what extent you are able to do analyse and measure the quality of water and environmental pollution.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	To what extent you are able to do analyse and identify unknown compounds from spectral measurements.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	To what extent you are able to prepare different polymers for industrial applications.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	To what extent you are able to find the strength and pH of unknown solutions using different instrumental methods.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	To what extent you are able to measure the percentage of metal present in metal ore.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO6	To what extent you are able to apply and demonstrate theoretical concepts of Engineering Chemistry.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - CY110 - Engineering Chemistry Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	1	3	3	3	2	3		2	2
CO2	3	2	2	1	3		3	2	3		2	

CO3	3	2	2	1	2	2	3	2	3		2	3
CO4	3	2	3	1	3	3	3		3		2	
CO5	3	2	3	1	3	3	3		3		2	
CO6	3	2	2	1	3	3	3	2	3	2	2	2

CO->PSO MAPPING - CY110 - Engineering Chemistry Lab

CO/PSO	PSO1	PSO2	PSO3
CO1	1		
CO2	1		
CO3			3
CO4		1	
CO5			2
CO6			2

COURSE->PO MAPPING - CY110 - Engineering Chemistry Lab

CY110/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	3	1	3	3	3	2	3	2	2	3

COURSE->PSO MAPPING - CY110 - Engineering Chemistry Lab

CY110/PSO	PSO1	PSO2	PSO3
	1	1	3

U100

Course Code	Course Name	L-T-P:C	Year of Introduction
U100	Language lab/CAD Practice/Bridge courses/Micro Projects etc	0-0-2:1	2016

No.	Course Outcome - U100 - Language lab/CAD Practice/Bridge courses/Micro Projects etc	Target
CO1	Apply the relevant knowledge and skills, which are acquired within the technical area, to a given problem	60%
CO2	Analyze and discuss problems and handle larger problems on the advanced level within the technical area within given constraints, even with limited information.	60%
CO3	Able to document and present one’s own work, for a given target group, with strict requirements on structure, format, and language usage	60%
CO4	Simulate and Test whether the work reached at a substantiated conclusion	60%
CO5	Identify one’s need for further knowledge and continuously develop one’s own competencies	60%

COURSE END SURVEY - U100 - Language lab/CAD Practice/Bridge courses/Micro Projects etc

Sl.No	Questions & Options
CO1	To what extent you are able to apply the relevant knowledge and skills, which are acquired within the technical area, to a given problem?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	To what extent you are able to analyze and discuss problems and handle larger problems on the advanced level within the technical area within given constraints, even with limited information?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	To what extent you are able to document and present one's own work, for a given target group, with strict requirements on structure, format, and language usage?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	To what extent you are able to simulate and test whether the work reached at a substantiated conclusion?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	To what extent you are able to Identify one's need for further knowledge and continuously develop one's own competencies?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - U100 - Language lab/CAD Practice/Bridge courses/Micro Projects etc

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3		3									
CO2	1											
CO3					3				3			
CO4		3										
CO5												3

CO->PSO MAPPING - U100 - Language lab/CAD Practice/Bridge courses/Micro Projects etc

CO/PSO	PSO1	PSO2	PSO3
CO1			
CO2			
CO3			
CO4			
CO5			

COURSE->PO MAPPING - U100 - Language lab/CAD Practice/Bridge courses/Micro Projects etc

U100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

	3	3	3		3				3			3

COURSE->PSO MAPPING - U100 - Language lab/CAD Practice/Bridge courses/Micro Projects etc

U100/PSO	PSO1	PSO2	PSO3

CS110

Course Code	Course Name	L-T-P:C	Year of Introduction
CS110	Computer Science Workshops	0-0-2:1	2016

No.	Course Outcome - CS110 - Computer Science Workshops	Target
CO1	Implement and execute simple computer programs from basic algorithms	65%
CO2	Construct programs using control structures, iterations.	65%
CO3	Construct programs using user defined functions and recursive functions	65%
CO4	Construct programs using lists, tuples and dictionaries	60%
CO5	Develop small scale applications using Python	60%

COURSE END SURVEY - CS110 - Computer Science Workshops

Sl.No	Questions & Options
CO1	To what extend you were able to Implement and execute simple computer programs from basic algorithms
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	To what extend were you able to Construct programs using control structures, iterations.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	To what extend were you able to Construct programs using user defined functions and recursive functions
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	To what extend were you able to Construct programs using lists, tuples and dictionaries
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	To what extend were you able to Develop small scale applications using Python
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - CS110 - Computer Science Workshops

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3						2	2		3
CO2	3	3	3						2	2		3

CO3	3	3	3		3				2	2		3
CO4	3	3	3		3				2	2		3
CO5	3	3	3		3	3			3	3	3	3

CO->PSO MAPPING - CS110 - Computer Science Workshops

CO/PSO	PSO1	PSO2	PSO3
CO1	2		
CO2	3		
CO3	3		
CO4	3		
CO5	1	2	3

COURSE->PO MAPPING - CS110 - Computer Science Workshops

CS110/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3		3	3			3	3	3	3

COURSE->PSO MAPPING - CS110 - Computer Science Workshops

CS110/PSO	PSO1	PSO2	PSO3
	3	2	3

EE110

Course Code	Course Name	L-T-P:C	Year of Introduction
EE110	Electrical Engineering Workshop	0-0-2:1	2016

No.	Course Outcome - EE110 - Electrical Engineering Workshop	Target
CO1	Explain electrical power supplies and their limitations, standard voltages and their tolerances, safety aspects of electrical systems and the importance of protective measures in wiring systems.	65%
CO2	Demonstrate different configurations of wires, cables and other accessories used in wiring circuits	65%
CO3	Demonstrate different lighting circuits for domestic and commercial buildings	65%
CO4	Wire different lighting circuits for domestic and commercial buildings	65%
CO5	Distinguish between light and power circuits to control and measure circuit parameters such as current, voltage and power	65%

COURSE END SURVEY - EE110 - Electrical Engineering Workshop

Sl.No	Questions & Options

CO1	to what extend you are familiar with Electrical power supply and their limitations, knowledge of standard voltages and their tolerances, safety aspects of electrical systems and the importance of protective measures in wiring systems
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	wheather you gain the working knowledge of different configurations of wires, cables and other accessories used in wiring circuits
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	Are you able to do different lighting circuits for domestic and commercial buildings
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO4	Are you able to wire up different lighting circuits for domestic and commercial buildings
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO5	Are you able to distinguish between light and power circuits to control and measure circuit parameters such as current, voltage and power
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*

CO->PO MAPPING - EE110 - Electrical Engineering Workshop

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2				3	2	2	2	2		3
CO2	3				2				2	2		2
CO3	3								2	2		3
CO4	3	2	2		2			2	2	2		3
CO5	3								2	2		2

CO->PSO MAPPING - EE110 - Electrical Engineering Workshop

CO/PSO	PSO1	PSO2	PSO3
CO1	2		
CO2	2		
CO3	2		
CO4	2		
CO5	2		

COURSE->PO MAPPING - EE110 - Electrical Engineering Workshop

EE110/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	2		2	3	2	2	2	2		3

COURSE->PSO MAPPING - EE110 - Electrical Engineering Workshop

EE110/PSO	PSO1	PSO2	PSO3
	2		

MAT101

Course Code	Course Name	L-T-P:C	Year of Introduction
MAT101	LINEAR ALGEBRA AND CALCULUS	3-1-0:4	2019

No.	Course Outcome - MAT101 - LINEAR ALGEBRA AND CALCULUS	Target
CO1	Solve systems of linear equations, diagonalize matrices and characterize quadratic forms	60%
CO2	Compute the partial and total derivatives and maxima and minima of multivariable functions	60%
CO3	Compute multiple integrals and apply them to find areas and volumes of geometrical shapes, mass and center of gravity of plane laminas	55%
CO4	Perform various tests to determine whether a given series is convergent, absolutely convergent or conditionally convergent	60%
CO5	Determine the Taylor and Fourier series expansion of functions and learn their applications	60%

COURSE END SURVEY - MAT101 - LINEAR ALGEBRA AND CALCULUS

Sl.No	Questions & Options
CO1	To what extent are you able to solve systems of linear equations, diagonalize matrices and characterise quadratic forms ?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	To what extent are you are able to compute the partial and total derivatives and maxima and minima of multivariable functions ?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	To what extent are you are able to compute multiple integrals and apply them to find areas and volumes of geometrical shapes, mass and centre of gravity of plane laminas ?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	To what extent are you are able to perform various tests to determine whether a given series is convergent, absolutely convergent or conditionally convergent ?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	To what extent are you able to determine the Taylor and Fourier series expansion of functions and learn their applications ?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - MAT101 - LINEAR ALGEBRA AND CALCULUS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO1	3	3	3	3	1							1
CO2	3	3	3	3	1							1
CO3	3	3	3	3	2							1
CO4	3	2	3	2	2							1
CO5	3	3	3	3	2							1

CO->PSO MAPPING - MAT101 - LINEAR ALGEBRA AND CALCULUS

CO/PSO	PSO1	PSO2	PSO3
CO1	3		
CO2	3		
CO3	3		
CO4	3		
CO5	3		

COURSE->PO MAPPING - MAT101 - LINEAR ALGEBRA AND CALCULUS

MAT101/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	2							1

COURSE->PSO MAPPING - MAT101 - LINEAR ALGEBRA AND CALCULUS

MAT101/PSO	PSO1	PSO2	PSO3
	3		

CYT100

Course Code	Course Name	L-T-P:C	Year of Introduction
CYT100	ENGINEERING CHEMISTRY	3-1-0:4	2019

No.	Course Outcome - CYT100 - ENGINEERING CHEMISTRY	Target
CO1	Apply the basic concepts of electrochemistry and corrosion to explore its possible applications in various engineering fields	60.5%
CO2	Demonstrate the principles of spectroscopy and apply them to explain chemical phenomena	60.5%
CO3	Discuss instrumental methods like chromatography, conductivity and thermal analysis for chemical analysis. and understand the basic concept of SEM for surface characterisation of nanomaterials	60.5%
CO4	Learn about the basics of stereochemistry and its application and apply the knowledge of conducting polymers and advanced polymers in engineering.	60.5%
CO5	Describe the properties of water and identify methods for water purification	60.5%

COURSE END SURVEY - CYT100 - ENGINEERING CHEMISTRY

Sl.No	Questions & Options
CO1	To what extent you can apply the basic concepts of electrochemistry and corrosion to explore its possible applications in various engineering fields
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	How far you are able to demonstrate the principles of spectroscopy and apply them to explain chemical phenomena
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	How far you are able to discuss instrumental methods and understand the surface characterisation technique.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	How much you are able to learn about the basics of Stereochemistry and its application and apply the knowledge of conducting polymers and advanced polymers in engineering.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	To what extent you describe the properties of water and identify methods for water purification
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - CYT100 - ENGINEERING CHEMISTRY

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2			2		2				3
CO2	3	2	3	2	2		2		2	2		
CO3	3	3	3	2	2			3		2		2
CO4	3	2		2		2			3			2
CO5	3		2	2			3	3		2	2	2

CO->PSO MAPPING - CYT100 - ENGINEERING CHEMISTRY

CO/PSO	PSO1	PSO2	PSO3
CO1	3		
CO2	3	2	2
CO3	3	3	
CO4	3	3	2
CO5	3		3

COURSE->PO MAPPING - CYT100 - ENGINEERING CHEMISTRY

CYT100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	2	2	2	3	3	3	2	2	3

COURSE->PSO MAPPING - CYT100 - ENGINEERING CHEMISTRY

CYT100/PSO	PSO1	PSO2	PSO3
	3	3	3

EST100

Course Code	Course Name	L-T-P:C	Year of Introduction
EST100	ENGINEERING MECHANICS	2-1-0:3	2019

No.	Course Outcome - EST100 - ENGINEERING MECHANICS	Target
CO1	Revise the basic principles of statics and evaluate reactions under equilibrium	55%
CO2	Analyze planar and spatial force systems	55%
CO3	Determine friction under static conditions	55%
CO4	Comprehend the properties of planes and solids	55%
CO5	Identify basic concepts of kinetics and kinematics	55%
CO6	Assess the concept of vibrations	55%

COURSE END SURVEY - EST100 - ENGINEERING MECHANICS

Sl.No	Questions & Options
CO1	To what extent are you able to revise the basic principles of statics and evaluate reactions under equilibrium ?
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO2	To what extent are you able to analyze planar and spatial force systems ?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO3	To what extent are you able to determine friction under static conditions ?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	To what extent are you able to comprehend the properties of planes and solids ?
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO5	To what extent are you able to identify basic concepts of kinetics and kinematics ?
	Answer Choice- *Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied*
CO6	To what extent are you able to assess the concept of vibrations ?
	Answer Choice- *Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful*

CO->PO MAPPING - EST100 - ENGINEERING MECHANICS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2						2		
CO2	3	3	2	2						2		
CO3	3	3	2	2						2		1
CO4	3	3	2	2		1				2		
CO5	3	3	2	2						2		
CO6	3	3	2	2						2		

CO->PSO MAPPING - EST100 - ENGINEERING MECHANICS

CO/PSO	PSO1	PSO2	PSO3
CO1	2	1	1
CO2	3	1	
CO3	2		
CO4	2	1	
CO5	2	1	
CO6	2		

COURSE->PO MAPPING - EST100 - ENGINEERING MECHANICS

EST100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	2	2		1				2		1

COURSE->PSO MAPPING - EST100 - ENGINEERING MECHANICS

EST100/PSO	PSO1	PSO2	PSO3
	3	1	1

EST120

Course Code	Course Name	L-T-P:C	Year of Introduction
EST120	BASICS OF CIVIL & MECHANICAL ENGINEERING	2-0-0:4	2019

No.	Course Outcome - EST120 - BASICS OF CIVIL & MECHANICAL ENGINEERING	Target
CO1	Discuss the relevance of Civil Engineering, buildings and its codal provisions63	55%
CO2	Comprehend the concept of surveying and identify various building materials	55%
CO3	Examine the different components of a building and identify type of construction to be employed	55%

CO4	Compare various cycles involved in different thermodynamic processes	60%
CO5	Analyze different power transmission devices	60%
CO6	Demonstrate working knowledge on manufacturing processes and machining operations	60%

COURSE END SURVEY - EST120 - BASICS OF CIVIL & MECHANICAL ENGINEERING

Sl.No	Questions & Options
CO1	How far are you able to demonstrate the importance of Civil Engineering in the infrastructural development of the society ?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	To what extent are you able to identify the types, uses and properties of various building materials ?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	To what extent are you able to identify the different components of a building and type of construction to be employed ?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	To what extent can you compare various cycles involved in different thermodynamic processes ?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	How far can you analyze different power transmission devices ?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO6	To what extent can you demonstrate working knowledge on manufacturing processes and machining operations ?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - EST120 - BASICS OF CIVIL & MECHANICAL ENGINEERING

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	2	1	3	3	2				
CO2	1	2	2	2	2	3	2	3	2			3
CO3	2	2	2	2	2	3	3	3	2			
CO4	3	2	2	2	2	2	2			2		
CO5	3	2	2	2	2	2	2		2	2		2
CO6	3	2	2	3	3	3	2	3	3	2	2	2

CO->PSO MAPPING - EST120 - BASICS OF CIVIL & MECHANICAL ENGINEERING

CO/PSO	PSO1	PSO2	PSO3
CO1			1
CO2	1	1	1

CO3			1
CO4	3	2	2
CO5	3	2	2
CO6	3	2	2

COURSE->PO MAPPING - EST120 - BASICS OF CIVIL & MECHANICAL ENGINEERING

EST120/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	2	3	3	3	3	3	3	2	2	3

COURSE->PSO MAPPING - EST120 - BASICS OF CIVIL & MECHANICAL ENGINEERING

EST120/PSO	PSO1	PSO2	PSO3
	3	2	2

HUN101

Course Code	Course Name	L-T-P:C	Year of Introduction
HUN101	LIFE SKILLS	2-0-2:0	2019

No.	Course Outcome - HUN101 - LIFE SKILLS	Target
CO1	Define and identify different life skills required in personal and professional life (Remembering-1).	60%
CO2	Develop self- awareness and apply well-defined techniques to cope with emotions, and stress (Creating-6).	60%
CO3	Examine the basic mechanics of effective communication and demonstrate through presentations (Applying-3).	60%
CO4	Judge a case or a situation by taking part in group discussions (Evaluating-5).	60%
CO5	Analyse and solve new problems using creative and critical thinking (Analysing-4).	60%
CO6	Discuss the basics of teamwork and leadership (Understanding-2).	60%

COURSE END SURVEY - HUN101 - LIFE SKILLS

Sl.No	Questions & Options
CO1	I am able to define and identify different life skills required in personal and professional life.
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO2	I am able to develop self- awareness and apply well-defined techniques to cope with emotions, and stress.
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO3	I am able to examine the basic mechanics of effective communication and demonstrate through presentations.

	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO4	I am able to Judge a case or a situation by taking part in group discussions
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO5	I am able to analyse and solve new problems using creative and critical thinking
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO6	I am capable of form team and take leadership
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*

CO->PO MAPPING - HUN101 - LIFE SKILLS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	1	1	1	1	3	1	2	3	2	3	2
CO2	1		1			3	1	3	3	3	3	2
CO3	1	1	1		1	2	1	3	3	3	3	3
CO4	1		2		2	2	1	3	3	2	3	3
CO5	1	3	3	3	2	1	2	3	3	3	2	2
CO6	1		1			2	1	3	3	3	3	2

CO->PSO MAPPING - HUN101 - LIFE SKILLS

CO/PSO	PSO1	PSO2	PSO3
CO1			3
CO2			
CO3		2	3
CO4			2
CO5	3		3
CO6		1	3

COURSE->PO MAPPING - HUN101 - LIFE SKILLS

HUN101/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	1	3	3	3	2	3	2	3	3	3	3	3

COURSE->PSO MAPPING - HUN101 - LIFE SKILLS

HUN101/PSO	PSO1	PSO2	PSO3
	3	2	3

CYL120

Course Code	Course Name	L-T-P:C	Year of Introduction
CYL120	ENGINEERING CHEMISTRY LAB	0-0-2:1	2019

No.	Course Outcome - CYL120 - ENGINEERING CHEMISTRY LAB	Target
CO1	Apply relevant techniques for the estimation of water quality parameters.	65.5%
CO2	Analyze and determine the concentration of metal ions present in a solution.	60.5%
CO3	Identify and apply standard instrumental techniques for chemical analysis	60.5%
CO4	Synthesize industrially relevant polymers such as resins	60.5%
CO5	Demonstrate the use of instruments like pH Meter and spectroscopic techniques like NMR to analyze organic compounds.	60.5%

COURSE END SURVEY - CYL120 - ENGINEERING CHEMISTRY LAB

Sl.No	Questions & Options
CO1	To what extent you can apply the basic concepts of water technology for engineering applications
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO2	How far you are able to analyze the concentration of metal ions by applying the concepts of engineering chemistry
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	How far you are able to understand and explain the instrumental techniques for chemical analysis
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	To what extent you are able to synthesize industrially relevant polymers
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	How much you are able to understand the working and applications of sophisticated instrumental techniques to solve societal challenges
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - CYL120 - ENGINEERING CHEMISTRY LAB

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3		2	3	3			2		2
CO2	3	2	2		3			2		2		2
CO3	3	2		3	2	2				2		2
CO4	3	2	3				3			2		3
CO5	3	2		3	2			2		2		3

CO->PSO MAPPING - CYL120 - ENGINEERING CHEMISTRY LAB

CO/PSO	PSO1	PSO2	PSO3
CO1	3	2	
CO2			2
CO3	2		2
CO4		3	
CO5		3	3

COURSE->PO MAPPING - CYL120 - ENGINEERING CHEMISTRY LAB

CYL120/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	3	3	3	3	3	2		2		3

COURSE->PSO MAPPING - CYL120 - ENGINEERING CHEMISTRY LAB

CYL120/PSO	PSO1	PSO2	PSO3
	3	3	3

ESL120

Course Code	Course Name	L-T-P:C	Year of Introduction
ESL120	CIVIL & MECHANICAL WORKSHOP	0-0-2:1	2019

No.	Course Outcome - ESL120 - CIVIL & MECHANICAL WORKSHOP	Target
CO1	Apply the modern measuring techniques for linear ,area,volume calculations and carry out setting out operations	60%
CO2	Compute the level difference between points	60%
CO3	Coordinate the work related to masonry ,plumbing,sanitary fittings and design of rain water harvesting systems	60%
CO4	Demonstrate various manufacturing processes in basic mechanical engineering workshops like smithy,carpentry,foundry and fitting	60%
CO5	Demonstrate the operations of various machine tools like lathe,milling,drilling and shaping machines	60%
CO6	Assemble and disassemble machines like IC engines	60%

COURSE END SURVEY - ESL120 - CIVIL & MECHANICAL WORKSHOP

Sl.No	Questions & Options
CO1	To what extent you are able to apply modern measuring techniques for linear,area and volume calculations and carry out setting out operations
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO2	To what extent you are able to compute the level difference between points for a civil work
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	To what extent you are able to coordinate the work related to masonry,plumbing ,sanitary fittings and design of rain water harvesting system for a residential building construction
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	To what extent you are to select smithy ,carpentry ,foundry and fitting for a particular engineering job
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	To what extent you are able to choose the various machine tools like lathe,milling,drilling and shaping machines for your machining requirement
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO6	To what extent you are able to assemble and disassemble simple machine components
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - ESL120 - CIVIL & MECHANICAL WORKSHOP

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	1					1			1
CO2	3	2	2	1					1			1
CO3	2	1	1	1					1			1
CO4	2	2	2	1	2	2		2		2	2	3
CO5	2	2	2	2	3	2	2	2		3	2	
CO6	2		2		2	2	2	3	2		3	

CO->PSO MAPPING - ESL120 - CIVIL & MECHANICAL WORKSHOP

CO/PSO	PSO1	PSO2	PSO3
CO1	1		1
CO2	1		1
CO3	1		1
CO4	1	2	2
CO5	1	2	2
CO6	1	1	2

COURSE->PO MAPPING - ESL120 - CIVIL & MECHANICAL WORKSHOP

ESL120/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	2	2	3	2	2	3	2	3	3	3

COURSE->PSO MAPPING - ESL120 - CIVIL & MECHANICAL WORKSHOP

ESL120/PSO	PSO1	PSO2	PSO3
	1	2	2

SEMESTER-2

MA102

Course Code	Course Name	L-T-P:C	Year of Introduction
MA102	Differential Equations	3-1-0:4	2016

No.	Course Outcome - MA102 - Differential Equations	Target
CO1	Demonstrate the use of homogeneous differential equations for the solution of engineering problems	62%
CO2	Solve non-homogeneous ordinary differential equations	60%
CO3	Demonstrate the properties and use of Fourier series and Euler’s formulas	60%
CO4	Illustrate the use of Partial differential equations and their solutions	62%
CO5	Apply partial differential equations and Fourier series to solve one - dimensional wave equations	60%
CO6	Apply partial differential equations and Fourier series to solve one - dimensional heat equations	60%

COURSE END SURVEY - MA102 - Differential Equations

Sl.No	Questions & Options
CO1	To what extent you are able to demonstrate the use of homogeneous differential equations for the solution of engineering problems
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO2	To what extent you are able to solve non-homogeneous ordinary differential equations
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO3	To what extent you are able to demonstrate the properties and use of Fourier series and Euler’s formulas
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	To what extent you are able to illustrate the use of Partial differential equations and their solutions
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO5	To what extent you are able to apply partial differential equations and Fourier series to solve one - dimensional wave equations
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO6	To what extent you are able to apply partial differential equations and Fourier series to solve one - dimensional heat equations

	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - MA102 - Differential Equations

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3							2	2
CO2	3	3	3	2							2	
CO3	3	3	3	3							2	
CO4	3	3	3	2							2	
CO5	3	3	3	2							2	
CO6	3	3	3	2							2	

CO->PSO MAPPING - MA102 - Differential Equations

CO/PSO	PSO1	PSO2	PSO3
CO1	2		
CO2	2		
CO3	2		
CO4	2		
CO5			
CO6			

COURSE->PO MAPPING - MA102 - Differential Equations

MA102/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3							2	2

COURSE->PSO MAPPING - MA102 - Differential Equations

MA102/PSO	PSO1	PSO2	PSO3
	2		

ME100

Course Code	Course Name	L-T-P:C	Year of Introduction
ME100	Basics of Mechanical Engineering	2-1-0:3	2016

No.	Course Outcome - ME100 - Basics of Mechanical Engineering	Target
CO1	Compare various cycles involved in different thermodynamic processes	61%
CO2	Analyze the working of various energy conversion devices	61%

CO3	Apply basic thermodynamic principles to refrigeration and air conditioning systems	61%
CO4	Discuss different parts of an automobile and related power transmission devices	61%
CO5	Demonstrate working knowledge on manufacturing processes and machining operations	61%

COURSE END SURVEY - ME100 - Basics of Mechanical Engineering

Sl.No	Questions & Options
CO1	Students were able to understand various thermodynamic processes and cycles.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	Students came to know and learn about various turbines, pumps, boilers and other energy conversion devices
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	Students learnt basics and working of various refregeration systems.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	Students got acquainted with parts of an automobile and its power transmission systems.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	Students were able to learn about various manufacturing processes and machines used for manufacturing.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - ME100 - Basics of Mechanical Engineering

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2		1							2
CO2	3	2	2	2	1							2
CO3	3	2	2	2	1							2
CO4	3	2	1	1	1							2
CO5	3	2	2	2	1							2

CO->PSO MAPPING - ME100 - Basics of Mechanical Engineering

CO/PSO	PSO1	PSO2	PSO3
CO1			
CO2			
CO3			
CO4			
CO5			

COURSE->PO MAPPING - ME100 - Basics of Mechanical Engineering

ME100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	2	2	1							2

COURSE->PSO MAPPING - ME100 - Basics of Mechanical Engineering

ME100/PSO	PSO1	PSO2	PSO3

BE110

Course Code	Course Name	L-T-P:C	Year of Introduction
BE110	Engineering Graphics	1-1-2:3	2016

No.	Course Outcome - BE110 - Engineering Graphics	Target
CO1	Demonstrate Engineering Drawing Standards (as per BIS), dimensioning and preparation of drawings leading to illustration of Graphics as the communication language of Engineers	62%
CO2	Interpret engineering drawings, leading to enhanced presentation skills of 3-D objects in 2-D plane / paper and improved visualizion of physical objects.	62%
CO3	Apply the principles of orthographic projections of lines, solids and sectioned views in the design of pipeline systems.	62%
CO4	Prepare isometric and perspective projections that help to reconstruct solutions to real-time engineering problems in 3D to provide better understanding.	62%
CO5	Create surface development and generate projections of penetrated objects which will help to develop suitable models for industrial applications.	62%
CO6	Recognize the importance of CAD software, and develop AutoCAD skills to transfer technical data and sketches into electronic drawing.	62%

COURSE END SURVEY - BE110 - Engineering Graphics

Sl.No	Questions & Options
CO1	To what extent you are able to demonstrate engineering drawing standards (as per BIS), dimensioning and preparation of drawings leading to illustration of graphics as the communication language of engineers
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	To what extent you are able to interpret engineering drawings, leading to enhanced presentation skills of 3-D objects in 2-D plane / paper and improved visualizion of physical objects.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	To what extent you are able to apply the principles of orthographic projections of lines, solids and sectioned views in the design of pipeline systems.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	To what extent you are able to prepare isometric and perspective projections that help to reconstruct solutions to real-time engineering problems in 3D to provide better understanding.

	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	To what extent you are able to create surface development and generate projections of penetrated objects which will help to develop suitable models for industrial applications.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO6	To what extent you are able to recognize the importance of CAD software, and develop AutoCAD skills to transfer technical data and sketches into electronic drawing.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - BE110 - Engineering Graphics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3			2		2		2		3
CO2	3	2	2		3	2				3		2
CO3	3	2			3					2		2
CO4	3	2	3		2					2		2
CO5	3	2	2		2					2		
CO6	3	3	2		3	2				3	3	2

CO->PSO MAPPING - BE110 - Engineering Graphics

CO/PSO	PSO1	PSO2	PSO3
CO1	2		
CO2	2		
CO3	2		
CO4	2		
CO5	2		
CO6	3	2	

COURSE->PO MAPPING - BE110 - Engineering Graphics

BE110/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3		3	2		2		3	3	3

COURSE->PSO MAPPING - BE110 - Engineering Graphics

BE110/PSO	PSO1	PSO2	PSO3
	3	2	

EC110

Course Code	Course Name	L-T-P:C	Year of Introduction
EC110	Electronics Engineering Workshop	0-0-2:1	2016

No.	Course Outcome - EC110 - Electronics Engineering Workshop	Target
CO1	Identify and select necessary components used in various electronic circuits and testing using a multimeter	76%
CO2	Generate waveforms with required frequency and amplitude using function generator and measure voltage, frequency and phase of any waveform using CRO.	72%
CO3	Analyze characteristics of simple circuits like rectifiers, multivibrators ,logic gates using transistors etc using bread board and soldering	72%
CO4	Demonstrate the working of Public Address System	72%
CO5	To simulate electronics circuits using LTSPICE and study the response	72%

COURSE END SURVEY - EC110 - Electronics Engineering Workshop

Sl.No	Questions & Options
CO1	To what extent you are able to identify and select necessary components used in various electronic circuits and testing using a multimeter
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO2	To what extent you are able to generate waveforms with required frequency and amplitude using function generator and measure voltage, frequency and phase of any waveform using CRO.
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO3	To what extent you are able to analyze characteristics of simple circuits like rectifiers, multivibrators ,logic gates using transistors etc using bread board and soldering
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO4	To what extent you are able to demonstrate the working of Public Address System
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO5	To what extent you are able to to simulate electronics circuits using LTSPICE and study the response
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*

CO->PO MAPPING - EC110 - Electronics Engineering Workshop

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3				3				3	2		2
CO2	3		2		2				3	2		
CO3	3				2				3	2		
CO4	3		3		2	2			3	2		

CO5	3	2	3		2				3	2		

CO->PSO MAPPING - EC110 - Electronics Engineering Workshop

CO/PSO	PSO1	PSO2	PSO3
CO1	2		3
CO2			
CO3	2		3
CO4			
CO5	2		

COURSE->PO MAPPING - EC110 - Electronics Engineering Workshop

EC110/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	3		3	2			3	2		2

COURSE->PSO MAPPING - EC110 - Electronics Engineering Workshop

EC110/PSO	PSO1	PSO2	PSO3
	2		3

CY100

Course Code	Course Name	L-T-P:C	Year of Introduction
CY100	Engineering Chemistry	3-1-0:4	2016

No.	Course Outcome - CY100 - Engineering Chemistry	Target
CO1	Demonstrate the principles of spectroscopy and apply them to explain chemical phenomena	65%
CO2	Illustrate principles and applications of various electrochemical techniques and cells.	65%
CO3	Describe instrumental methods like chromatography, conductivity and thermal analysis for chemical analysis.	60%
CO4	Recognize the properties and applications of engineering materials, such as polymers and nanomaterials	65%
CO5	Evaluate the properties of complex chemicals such as fuels and lubricants.	65%
CO6	Describe the properties of water and identify methods for water purification	65%

COURSE END SURVEY - CY100 - Engineering Chemistry

Sl.No	Questions & Options
CO1	To what extent you are able to explain the principles of spectroscopy and apply them to explain chemical phenomena

	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO2	To what extent you are able to explain the principles and applications of various electrochemical techniques and cells.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO3	To what extent you are able to apply instrumental methods like chromatography, conductivity and thermal analysis for chemical analysis.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	To what extent you are able to recognize the properties and applications of engineering materials, such as polymers and nanomaterials
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO5	To what extent you are able to evaluate the properties of complex chemicals such as fuels and lubricants.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO6	To what extent you are able to describe the properties of water and identify methods for water purification
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - CY100 - Engineering Chemistry

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2	3	3	3					3
CO2	3	3	2		3							
CO3	3		2		3			2				
CO4	3	2	2	2	3							
CO5	3	2	2		3							
CO6	3	2	2			3						2

CO->PSO MAPPING - CY100 - Engineering Chemistry

CO/PSO	PSO1	PSO2	PSO3
CO1		2	
CO2			2
CO3		2	
CO4		3	
CO5			1
CO6			1

COURSE->PO MAPPING - CY100 - Engineering Chemistry

CY100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

	3	3	2	2	3	3	3	2				3

COURSE->PSO MAPPING - CY100 - Engineering Chemistry

CY100/PSO	PSO1	PSO2	PSO3
		3	2

CS100

Course Code	Course Name	L-T-P:C	Year of Introduction
CS100	Computer Programming	2-1-0:3	2016

No.	Course Outcome - CS100 - Computer Programming	Target
CO1	Describe fundamentals of C programming such as variables, methods, conditional and iterative execution	65.5%
CO2	Analyze and solve programming problems using a procedural and algorithmic approach with functional decomposition	51%
CO3	Design programs that demonstrate effective use of advanced C features including pointers and memory management	60.5%
CO4	Develop and execute computerized solution for various problems in functions using appropriate C language constructs	60.5%
CO5	Identify sorting and searching techniques to solve application programs	60.5%
CO6	Identify and Implement file operations for a given application	60.5%

COURSE END SURVEY - CS100 - Computer Programming

Sl.No	Questions & Options
CO1	How far have you been able to describe fundamentals of C programming such as variables, methods, conditional and iterative execution
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO2	How far have you been able to solve programming problems using procedural and algorithmic approach with functional decomposition.
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO3	How far have you been able to design programs that demonstrate demonstrate effective use of advanced C features including pointers and memory management
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO4	To what extent you are able to develop and execute computerized solution for various problems in functions using appropriate C language constructs
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
	To what extent are you able to identify sorting and searching techniques to solve application programs

CO5	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO6	To what extent are you able to identify and Implement file operations for a given application
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - CS100 - Computer Programming

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3									2	2
CO2	3	3	2			2			2		2	2
CO3	2	1	2	3	3				3			3
CO4	3	2	3	3	3	2			3		2	3
CO5	3	2	3	2	3				2		2	2
CO6	3	1	3	3	3	2			2			2

CO->PSO MAPPING - CS100 - Computer Programming

CO/PSO	PSO1	PSO2	PSO3
CO1	3	2	
CO2	3	3	
CO3	3	3	2
CO4	3	3	
CO5	3	3	
CO6	3	3	

COURSE->PO MAPPING - CS100 - Computer Programming

CS100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	2			3		2	3

COURSE->PSO MAPPING - CS100 - Computer Programming

CS100/PSO	PSO1	PSO2	PSO3
	3	3	2

CY110

Course Code	Course Name	L-T-P:C	Year of Introduction
CY110	Engineering Chemistry Lab	0-0-2:1	2016

No.	Course Outcome - CY110 - Engineering Chemistry Lab	Target

CO1	Analyse and measure the quality of water and environmental pollution.	70%
CO2	Analyse and identify unknown compounds from spectral measurements.	70%
CO3	Prepare different polymers for industrial applications.	70%
CO4	Find the strength and pH of unknown solutions using different instrumental methods.	70%
CO5	Measure the percentage of metal present in metal ore.	70%
CO6	Apply and demonstrate theoretical concepts of Engineering Chemistry.	70%

COURSE END SURVEY - CY110 - Engineering Chemistry Lab

Sl.No	Questions & Options
CO1	To what extent you are able to analyse and measure the quality of water and environmental pollution.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO2	To what extent you are able to analyse and identify unknown compounds from spectral measurements.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO3	To what extent you are able to prepare different polymers for industrial applications.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	To what extent you are able to find the strength and pH of unknown solutions using different instrumental methods.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO5	To what extent you are able to measure the percentage of metal present in metal ore.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO6	To what extent you are able to apply and demonstrate theoretical concepts of Engineering Chemistry.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - CY110 - Engineering Chemistry Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	2	3	3	3		2	2		2
CO2	3	2		2					2	2		
CO3	3	2	2	2					2	2	3	3
CO4	3	2	3	2	3				2	2		
CO5	3	2	3		3				2	2		
CO6	3	2	3		3	3				2	1	2

CO->PSO MAPPING - CY110 - Engineering Chemistry Lab

CO/PSO	PSO1	PSO2	PSO3

CO1	2		
CO2	2		
CO3			3
CO4			
CO5			
CO6			2

COURSE->PO MAPPING - CY110 - Engineering Chemistry Lab

CY110/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	3	2	3	3	3		2	2	3	3

COURSE->PSO MAPPING - CY110 - Engineering Chemistry Lab

CY110/PSO	PSO1	PSO2	PSO3
	2		3

MicroProject

Course Code	Course Name	L-T-P:C	Year of Introduction
MicroProject	MICRO PROJECT	0-0-4:4	2010

COURSE END SURVEY - MicroProject - MICRO PROJECT
CO->PO MAPPING - MicroProject - MICRO PROJECT

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - MicroProject - MICRO PROJECT

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - MicroProject - MICRO PROJECT

MicroProject/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - MicroProject - MICRO PROJECT

MicroProject/PSO	PSO1	PSO2	PSO3

BE102

Course Code	Course Name	L-T-P:C	Year of Introduction
BE102	Design & Engineering	2-0-2:3	2016

No.	Course Outcome - BE102 - Design & Engineering	Target
CO1	Identify the different elements involved in good designs and practice them when called for.	66%
CO2	Solve the different stages of Design and formulate detailed designs with solid modeling and visualization.	66%
CO3	Develop the prototype and propose various stages towards final product design.	62%
CO4	Build a broader perspective of design covering the function, cost, environmental sensitivity, safety and factors other than from engineering analysis	62%
CO5	Identify product oriented and user oriented aspects that make the customer required design.	60%
CO6	Utilize various modern engineering methods and build basic knowledge of Intellectual Property Rights.	62%

COURSE END SURVEY - BE102 - Design & Engineering

Sl.No	Questions & Options
CO1	How far you have been able to identify the different elements involved in good designs and practice them when called for?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	How far you have been able to solve the different stages of design and formulate detailed designs with solid modeling and visualization?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	How far you have been able to develop the prototype and propose various stages towards final product design.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	How far you have been able to build a broader perspective of design covering the function, cost, environmental sensitivity, safety and factors other than from engineering analysis
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	How far you have been able to Identify product oriented and user oriented aspects that make the customer required design?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO6	How far you have been able to utilize various modern engineering methods and build basic knowledge of Intellectual Property Rights.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - BE102 - Design & Engineering

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3			3	2	3		2		
CO2	3	3	3		2					3		

CO3	3	2	3		2				3	3	3	
CO4	3	2	3		2	3	3	3		2		
CO5	3	2	3									
CO6	3	2	3		2	2		3		3		3

CO->PSO MAPPING - BE102 - Design & Engineering

CO/PSO	PSO1	PSO2	PSO3
CO1	2	2	
CO2	2		
CO3	1		
CO4			3
CO5			2
CO6			2

COURSE->PO MAPPING - BE102 - Design & Engineering

BE102/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3		2	3	3	3	3	3	3	3

COURSE->PSO MAPPING - BE102 - Design & Engineering

BE102/PSO	PSO1	PSO2	PSO3
	2	2	3

PH100

Course Code	Course Name	L-T-P:C	Year of Introduction
PH100	Engineering Physics	3-1-0:4	2016

No.	Course Outcome - PH100 - Engineering Physics	Target
CO1	Analyse different phenomena associated with the generation and propagation of oscillations and waves	62%
CO2	Demonstrate wave-like phenomena associated with light and use them to measureits properties	62%
CO3	Illustrate the phenomenon of superconductivity and evaluate the properties of the superconducting state	62%
CO4	Identify the features of quantum and statistical phenomena and demonstrate the dynamics of microscopic entities.	57%
CO5	Describe the production and properties of acoustic and ultrasonic waves and demonstrate their applications.	62%

CO6	Outline the construction and properties of different lasers and optoelectronic devices, and identify their applications	62%

COURSE END SURVEY - PH100 - Engineering Physics

Sl.No	Questions & Options
CO1	To what extent you are able to analyse different phenomena associated with the generation and propagation of oscillations and waves
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO2	To what extent you are able to demonstrate wave-like phenomena associated with light and use them to measure its properties
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO3	To what extent you are able to illustrate the phenomenon of superconductivity and evaluate the properties of the superconducting state
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	To what extent you are able to Identify the features of quantum and statistical phenomena and demonstrate the dynamics of microscopic entities.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO5	To what extent you are able to describe the production and properties of acoustic and ultrasonic waves and demonstrate their applications.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO6	To what extent you are able to outline the construction and properties of different lasers and optoelectronic devices, and identify their applications
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - PH100 - Engineering Physics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	2								
CO2	3	2	1	2	2							
CO3	3	2	1	2								
CO4	3	2	1	2								
CO5	3	2	1	2	3							
CO6	3	2	1	2	3							

CO->PSO MAPPING - PH100 - Engineering Physics

CO/PSO	PSO1	PSO2	PSO3
CO1	1		
CO2	1		

CO3	1		
CO4	2		
CO5			
CO6	2		

COURSE->PO MAPPING - PH100 - Engineering Physics

PH100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	1	2	3							

COURSE->PSO MAPPING - PH100 - Engineering Physics

PH100/PSO	PSO1	PSO2	PSO3
	2		

EC100

Course Code	Course Name	L-T-P:C	Year of Introduction
EC100	Basics of Electronics Engineering	2-1-0:3	2016

No.	Course Outcome - EC100 - Basics of Electronics Engineering	Target
CO1	Identify and select necessary components used in various electronic circuits.	60.5%
CO2	Design and organize simple circuits using different types of diodes and transistors	60.5%
CO3	Demonstrate the working of analog circuits such as rectifiers, amplifiers and oscillators.	60.5%
CO4	Illustrate the working of basic building blocks of analog and digital systems such as Operational amplifiers and Logic gates.	60.5%
CO5	Demonstrate the use of basic measuring instruments used in electronics work.	60.5%
CO6	Compare and contrast various modulation techniques, communication systems and TV signal transmission techniques.	60.5%

COURSE END SURVEY - EC100 - Basics of Electronics Engineering

Sl.No	Questions & Options
CO1	To what extent you are able to identify and select necessary components used in various electronic circuits.
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO2	To what extent you are able to design and organize simple circuits using different types of diodes and transistors
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO3	To what extent you are able to demonstrate the working of analog circuits such as rectifiers, amplifiers and oscillators.

	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO4	To what extent you are able to Illustrate the working of basic building blocks of analog and digital systems such as Operational amplifiers and Logic gates.
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO5	To what extent you are able to demonstrate the use of basic measuring instruments used in electronics work.
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO6	To what extent you are able to compare and contrast various modulation techniques, communication systems and TV signal transmission techniques.
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*

CO->PO MAPPING - EC100 - Basics of Electronics Engineering

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3											2
CO2	3		3									2
CO3	3	2	3	3								
CO4	3		3	3								3
CO5	3			2			2					2
CO6	3				2							2

CO->PSO MAPPING - EC100 - Basics of Electronics Engineering

CO/PSO	PSO1	PSO2	PSO3
CO1	1		
CO2	1		
CO3	1		
CO4	2		
CO5		1	
CO6	1		

COURSE->PO MAPPING - EC100 - Basics of Electronics Engineering

EC100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	3	3	2		2					3

COURSE->PSO MAPPING - EC100 - Basics of Electronics Engineering

EC100/PSO	PSO1	PSO2	PSO3
	2	1	

PH110

Course Code	Course Name	L-T-P:C	Year of Introduction
PH110	Engineering Physics Lab	0-0-2:1	2016

No.	Course Outcome - PH110 - Engineering Physics Lab	Target
CO1	Measure basic physical quantities, such as voltage, frequency, temperature etc and evaluate measurement accuracy.	70%
CO2	Measure and analyse the properties of electrical and acoustic waves and oscillations, and demonstrate resonance.	70%
CO3	Demonstrate wave-like properties of light and measure the wavelength of monochromatic light sources	70%
CO4	Illustrate the propagation of light through an optical fibre and measure its numerical aperture	70%
CO5	Demonstrate the working of devices such as solar cells and photoelectric cells	70%
CO6	Organize an experimental set up and measure fundamental constants such as the Planck's constant.	70%

COURSE END SURVEY - PH110 - Engineering Physics Lab

Sl.No	Questions & Options
CO1	To what extent you are able to Measure basic physical quantities, such as voltage, frequency, temperature etc and evaluate measurement accuracy.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	To what extend you are able to measure and analyse the properties of electrical and acoustic waves and oscillations, and demonstrate resonance.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	To what extend you are able to demonstrate wave-like properties of light and measure the wavelength of monochromatic light sources
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	To what extend you are able to illustrate the propagation of light through an optical fibre and measure its numerical aperture
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	To what extend you are able to demonstrate the working of devices such as solar cells and photoelectric cells
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO6	To what extend you are able to organize an experimental set up and measure fundamental constants such as the Planck's constant.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - PH110 - Engineering Physics Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2		2	2							
CO2	3	3		2	2							
CO3	3	3		2	2							
CO4	3	3		2	2							
CO5	3	2		2	2							
CO6	3	3		2	3							

CO->PSO MAPPING - PH110 - Engineering Physics Lab

CO/PSO	PSO1	PSO2	PSO3
CO1	3		
CO2	2		
CO3	1		
CO4	1		
CO5	1		
CO6	1		

COURSE->PO MAPPING - PH110 - Engineering Physics Lab

PH110/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3		2	3							

COURSE->PSO MAPPING - PH110 - Engineering Physics Lab

PH110/PSO	PSO1	PSO2	PSO3
	3		

CS120

Course Code	Course Name	L-T-P:C	Year of Introduction
CS120	Computer Programming LAB	0-0-2:1	2016

No.	Course Outcome - CS120 - Computer Programming LAB	Target
CO1	Analyse and solve simple arithmetic and logical problems using C Programming Language.	60.5%
CO2	Organize appropriate algorithms to solve problems using control Structures.	60.5%

CO3	Identify the use of structured and modular design principles	60.5%
CO4	Demonstrate effective use of derived data types to solve complex problems.	60.5%
CO5	Implement file Operations in C programming for a given application.	60.5%
CO6	Apply the knowledge of computing and mathematics to solve real world problems by developing micro-projects using simple Data Structures.	60.5%

COURSE END SURVEY - CS120 - Computer Programming LAB

Sl.No	Questions & Options
CO1	This course helped me to analyse and solve simple arithmetic and logical problems using C Programming Language.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	This course helped me to organize appropriate algorithms to solve problems using control Structures
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	This course helped me to identify the use of structured and modular design principles.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	This course helped me to demonstrate effective use of derived data types to solve complex problems.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	This course helped me to implement file Operations in C programming for a given application.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO6	This course helped me to apply the knowledge of computing and mathematics to solve real world problems by developing micro-projects using simple Data Structures
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - CS120 - Computer Programming LAB

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3		3				3	2		3
CO2	3	3	3	2	3				3	2		3
CO3	3	3	3		3				3	2		3
CO4	3	3	3	3	3				3	2		3
CO5	3	3	3		3				3	2	2	3
CO6	3	3	3	3	3	2		2	3	2	3	3

CO->PSO MAPPING - CS120 - Computer Programming LAB

CO/PSO	PSO1	PSO2	PSO3
CO1	3		

CO2	3		
CO3	3		
CO4	3	2	
CO5	3	3	
CO6	3	3	3

COURSE->PO MAPPING - CS120 - Computer Programming LAB

CS120/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	2		2	3	2	3	3

COURSE->PSO MAPPING - CS120 - Computer Programming LAB

CS120/PSO	PSO1	PSO2	PSO3
	3	3	3

U100

Course Code	Course Name	L-T-P:C	Year of Introduction
U100	Language lab/CAD Practice/Bridge courses/Micro Projects etc	0-0-2:1	2016

COURSE END SURVEY - U100 - Language lab/CAD Practice/Bridge courses/Micro Projects etc
CO->PO MAPPING - U100 - Language lab/CAD Practice/Bridge courses/Micro Projects etc

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - U100 - Language lab/CAD Practice/Bridge courses/Micro Projects etc

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - U100 - Language lab/CAD Practice/Bridge courses/Micro Projects etc

U100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - U100 - Language lab/CAD Practice/Bridge courses/Micro Projects etc

U100/PSO	PSO1	PSO2	PSO3

BE100

Course Code	Course Name	L-T-P:C	Year of Introduction
BE100	Engineering Mechanics	3-1-0:4	2016

No.	Course Outcome - BE100 - Engineering Mechanics	Target

CO1	Analyse reactions of various supports under equilibrium	55%
CO2	Determine the forces in planar and spatial systems	55%
CO3	Comprehend the properties of planes and solids	55%
CO4	Determine friction under static conditions	55%
CO5	Identify basic concepts of dynamic problems	55%

COURSE END SURVEY - BE100 - Engineering Mechanics

Sl.No	Questions & Options
CO1	To what extend you are able to determine the reactions of various supports under equilibrium condition
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO2	To what extend you are able to determine the forces in planar and spatial systems
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO3	How far you are able to comprehend the properties of planes and solids
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO4	How far you are able to determine the friction under static conditions
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO5	How far you are able to identify the basic concepts of dynamic problems
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*

CO->PO MAPPING - BE100 - Engineering Mechanics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	3	2					1		2
CO2	3	2		3	2							2
CO3	3	2	2	3	2						3	2
CO4	3	2		3	2		1				3	2
CO5	3	2		3	2							2

CO->PSO MAPPING - BE100 - Engineering Mechanics

CO/PSO	PSO1	PSO2	PSO3
CO1			
CO2			
CO3			
CO4			

CO5			1

COURSE->PO MAPPING - BE100 - Engineering Mechanics

BE100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	2	3	2		1			1	3	2

COURSE->PSO MAPPING - BE100 - Engineering Mechanics

BE100/PSO	PSO1	PSO2	PSO3
			1

MAT102

Course Code	Course Name	L-T-P:C	Year of Introduction
MAT102	VECTOR CALCULUS, DIFFERENTIAL EQUATIONS AND TRANSFORMS	3-1-0:4	2019

No.	Course Outcome - MAT102 - VECTOR CALCULUS, DIFFERENTIAL EQUATIONS AND TRANSFORMS	Target
CO1	Apply the concept of vector functions and learn to work with conservative vector field	60%
CO2	Evaluate surface and volume integrals and study their relationship and applications	60%
CO3	Solve homogeneous and non-homogeneous linear differential equation with constant coefficients	60%
CO4	Use Laplace transform for engineering applications specially for ODEs arising from engineering problems	60%
CO5	Utilize Fourier transforms to solve physical problems arising in engineering	60%

COURSE END SURVEY - MAT102 - VECTOR CALCULUS, DIFFERENTIAL EQUATIONS AND TRANSFORMS

Sl.No	Questions & Options
CO1	To what extend are you able to apply the concept of vector functions and learn to work with conservative vector field
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	To what extend are you able to evaluate surface and volume integrals and study their relationship and applications
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	To what extend are you able to solve homogeneous and non-homogeneous linear differential equation with constant coefficients
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO4	To what extend are you able to use Laplace transform for engineering applications specially for ODEs arising from engineering problems
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	To what extend are you able to utilize Fourier transforms to solve physical problems arising in engineering
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - MAT102 - VECTOR CALCULUS, DIFFERENTIAL EQUATIONS AND TRANSFORMS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3							1			
CO2	3	3							1			
CO3	3	3							1			
CO4	3	3							1			
CO5	3	3							1			

CO->PSO MAPPING - MAT102 - VECTOR CALCULUS, DIFFERENTIAL EQUATIONS AND TRANSFORMS

CO/PSO	PSO1	PSO2	PSO3
CO1	2		2
CO2	2		2
CO3	2		2
CO4	2		2
CO5	2		2

COURSE->PO MAPPING - MAT102 - VECTOR CALCULUS, DIFFERENTIAL EQUATIONS AND TRANSFORMS

MAT102/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3							1			

COURSE->PSO MAPPING - MAT102 - VECTOR CALCULUS, DIFFERENTIAL EQUATIONS AND TRANSFORMS

MAT102/PSO	PSO1	PSO2	PSO3
	2		2

PHT100

Course Code	Course Name	L-T-P:C	Year of Introduction
PHT100	ENGINEERING PHYSICS A	3-1-0:4	2019

No.	Course Outcome - PHT100 - ENGINEERING PHYSICS A	Target

CO1	Compute the quantitative aspects of waves and oscillations in engineering systems.	60%
CO2	Apply the interaction of light with matter through interference, diffraction and identify these phenomena in different natural optical processes and optical instruments.	60%
CO3	Analyze the behaviour of matter in the atomic and subatomic level through the principles of quantum mechanics to perceive the microscopic processes in electronic devices.	60%
CO4	Classify the properties of magnetic materials and apply vector calculus to static magnetic fields and use Maxwell's equations to diverse engineering problems	60%
CO5	Analyze the principles behind various superconducting applications, explain the working of solid state lighting devices and fibre optic communication system	60%

COURSE END SURVEY - PHT100 - ENGINEERING PHYSICS A

Sl.No	Questions & Options
CO1	To what extend you are able to Compute the quantitative aspects of waves and oscillations in engineering systems.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	To what extend you are able apply the interaction of light with matter through interference, diffraction and identify these phenomena in different natural optical processes and optical instruments.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	To what extend you are able to Analyze the behaviour of matter in the atomic and subatomic level through the principles of quantum mechanics to perceive the microscopic processes in electronic devices.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	To what extend you are able to Classify the properties of magnetic materials and apply vector calculus to static magnetic fields and use Maxwell's equations to diverse engineering problems
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	To what extend you are able to Analyze the principles behind various superconducting applications, explain the working of solid state lighting devices and fibre optic communication system
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - PHT100 - ENGINEERING PHYSICS A

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2						1	2			1
CO2	3	2						1	2			1
CO3	3	2						1	2			1
CO4	3	1						1	2			1
CO5	3	1						1	2			1

CO->PSO MAPPING - PHT100 - ENGINEERING PHYSICS A

CO/PSO	PSO1	PSO2	PSO3

CO1	1		1
CO2			
CO3			
CO4			
CO5	2		1

COURSE->PO MAPPING - PHT100 - ENGINEERING PHYSICS A

PHT100/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2						1	2			1

COURSE->PSO MAPPING - PHT100 - ENGINEERING PHYSICS A

PHT100/PSO	PSO1	PSO2	PSO3
	2		1

EST110

Course Code	Course Name	L-T-P:C	Year of Introduction
EST110	ENGINEERING GRAPHICS	2-0-2:3	2019

No.	Course Outcome - EST110 - ENGINEERING GRAPHICS	Target
CO1	Demonstrate Engineering Drawing Standards (as per BIS), dimensioning and preparation of drawings leading to illustration of Graphics as the communication language of Engineers	65%
CO2	Interpret engineering drawings, leading to enhanced presentation skills of 3-D objects in 2-D plane / paper and improved visualizion of physical objects.	65%
CO3	Apply the principles of orthographic projections of lines, solids and sectioned views in the design of pipeline systems.	65%
CO4	Prepare isometric and perspective projections that help to reconstruct solutions to real-time engineering problems in 3D to provide better understanding.	65%
CO5	Create surface development of objects which will help to develop suitable models for industrial applications.	65%
CO6	Recognize the importance of CAD software, and develop AutoCAD skills to transfer technical data and sketches into electronic drawing.	65%

COURSE END SURVEY - EST110 - ENGINEERING GRAPHICS

Sl.No	Questions & Options
CO1	To what extent you are able to demonstrate Engineering Drawing Standards (as per BIS), dimensioning and preparation of drawings leading to illustration of Graphics as the communication language of Engineers?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO2	To what extent you are able to interpret engineering drawings, leading to enhanced presentation skills of 3-D objects in 2-D plane / paper and improved visualization of physical objects?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	To what extent you are able to apply the principles of orthographic projections of lines, solids and sectioned views in the design of pipeline systems?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	To what extent you are able to prepare isometric and perspective projections that help to reconstruct solutions to real-time engineering problems in 3D to provide better understanding?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	To what extent you are able to create surface development and generate projections of penetrated objects which will help to develop suitable models for industrial applications?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO6	To what extent you are able to recognize the importance of CAD software, and develop AutoCAD skills to transfer technical data and sketches into electronic drawing?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - EST110 - ENGINEERING GRAPHICS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	2			2		3		3		
CO2	2	3	2	2	2	2		2		3		3
CO3	3	2	2	2				2		3		
CO4	3	2	2	2						3		2
CO5	3	2	2			1				3		2
CO6		3	2	3	2	3				3		3

CO->PSO MAPPING - EST110 - ENGINEERING GRAPHICS

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	2
CO2			
CO3			
CO4			
CO5			
CO6			

COURSE->PO MAPPING - EST110 - ENGINEERING GRAPHICS

EST110/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

	3	3	2	3	2	3		3		3		3

COURSE->PSO MAPPING - EST110 - ENGINEERING GRAPHICS

EST110/PSO	PSO1	PSO2	PSO3
	3	3	2

EST130

Course Code	Course Name	L-T-P:C	Year of Introduction
EST130	BASICS OF ELECTRICAL & ELECTRONICS ENGINEERING	4-0-0:4	2019

No.	Course Outcome - EST130 - BASICS OF ELECTRICAL & ELECTRONICS ENGINEERING	Target
CO1	Apply fundamental concepts and circuit laws to solve simple DC electric circuits	72%
CO2	Develop and solve models of magnetic circuits	72%
CO3	Apply the fundamental laws of electrical engineering to solve simple ac circuits in steady state	72%
CO4	Identify and select necessary components used in various electronic circuits.	62%
CO5	Describe and outline the working principle of a voltage amplifier and electronic instrumentation system	62%
CO6	Explain the principle of radio and cellular communication	62%

COURSE END SURVEY - EST130 - BASICS OF ELECTRICAL & ELECTRONICS ENGINEERING

Sl.No	Questions & Options
CO1	To what extent you are able to apply fundamental concepts and circuit laws to solve simple DC electric circuits
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	To what extent you are able to develop and solve models of magnetic circuits
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	To what extent you are able to apply the fundamental laws of electrical engineering to solve simple ac circuits on steady state
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	To what extent you are able to identify and select necessary components used in various electronic circuits.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	To what extent you are able to describe and outline the working principle of a voltage amplifier and electronic instrumentation system
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
	To what extent you are able to explain the principle of radio and cellular communication

CO6	
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - EST130 - BASICS OF ELECTRICAL & ELECTRONICS ENGINEERING

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2		2								2
CO2	3	2		2								2
CO3	3	2		2								2
CO4	2	2		2								3
CO5	2	2		2								2
CO6	2											2

CO->PSO MAPPING - EST130 - BASICS OF ELECTRICAL & ELECTRONICS ENGINEERING

CO/PSO	PSO1	PSO2	PSO3
CO1	2		
CO2	2		
CO3	2		
CO4		1	
CO5		2	2
CO6		2	2

COURSE->PO MAPPING - EST130 - BASICS OF ELECTRICAL & ELECTRONICS ENGINEERING

EST130/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2		2								3

COURSE->PSO MAPPING - EST130 - BASICS OF ELECTRICAL & ELECTRONICS ENGINEERING

EST130/PSO	PSO1	PSO2	PSO3
	2	2	2

EST102

Course Code	Course Name	L-T-P:C	Year of Introduction
EST102	PROGRAMMING IN C	2-1-2:4	2019

No.	Course Outcome - EST102 - PROGRAMMING IN C	Target
CO1	Analyse a computational problem and develop an algorithm/ flow chart to find its solution.	56%

CO2	Develop C programs with branching and looping statements which uses Arithmetic, Logical, Relational or Bitwise operators.	56%
CO3	Develop C programs using arrays,structure and union for storing the data to be processed.	56%
CO4	Divide a given computational problem into a number of modules and develop a readable multi-function C program by using recursion if required, to find the solution to the computational problem.	56%
CO5	Develop C programs which use pointers for array processing and parameter passing	56%
CO6	Develop C programs with files for reading input and storing output.	56%

COURSE END SURVEY - EST102 - PROGRAMMING IN C

Sl.No	Questions & Options
CO1	Are you able to analyse a computational problem and develop an algorithm/ flow chart to find its solution?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO2	Are you able to develop C programs with branching and looping statements which uses Arithmetic , Logical , Relational or Bitwise operators?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO3	Are you able to develop C programs with arrays , structure or union for storing the data to be processed?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO4	Are you able to divide a given computational problem into a number of modules and develop a readable multi-function C program by using recursion if required, to find the solution to the computational problem?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO5	Are you able to develop C programs which use pointers for array processing and parameter passing?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO6	Are you able to develop C programs with files for reading input and storing output?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*

CO->PO MAPPING - EST102 - PROGRAMMING IN C

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3		2				3		3
CO2	3	3	3	2	3							2
CO3	3	3	3	2	3							2
CO4	3	3	3	3	3					3		3
CO5	3	3			3							2
CO6	3	3			3							2

CO->PSO MAPPING - EST102 - PROGRAMMING IN C

CO/PSO	PSO1	PSO2	PSO3
CO1	3	2	3
CO2	3	2	3
CO3	3	1	3
CO4	3	2	3
CO5	3	2	3
CO6	3	2	3

COURSE->PO MAPPING - EST102 - PROGRAMMING IN C

EST102/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	2				3		3

COURSE->PSO MAPPING - EST102 - PROGRAMMING IN C

EST102/PSO	PSO1	PSO2	PSO3
	3	2	3

PHL120

Course Code	Course Name	L-T-P:C	Year of Introduction
PHL120	ENGINEERING PHYSICS LAB	0-0-2:1	2019

No.	Course Outcome - PHL120 - ENGINEERING PHYSICS LAB	Target
CO1	Apply modern instruments like CRO, strain gauge to measure the basic physical quantities viz. frequency and amplitude of a wave pattern,strain etc. Carryout measurement of wave pattern in a stretched string and the corresponding frequency values using a Melde’s string apparatus.	60%
CO2	Determine the wavelength of monochromatic beam of light and thickness of micro-thin object etc. by forming Newton’s rings pattern and an air wedge fringe pattern.	60%
CO3	Carryout the measurement of wavelength by diffraction of plane transmission grating and the spectra formed by a monochromatic beam of light and a laser.	60%
CO4	Determine the wavelength of a laser beam using the plane transmission grating.Measurement of numerical aperture of an optic fibre and evaluate the properties of a solar cell and LED through itsI-Vcharacteristics.	60%
CO5	Determine the velocity of ultrasonic waves in liquid using ultrasonic diffractometer.Compare the magnetic moment of various magnets and determine the magnetic flux density using deflection/vibration Magnetometer.	60%

COURSE END SURVEY - PHL120 - ENGINEERING PHYSICS LAB

Sl.No	Questions & Options

CO1	To what extend you are able toApply modern instruments like CRO, strain gauge to measure the basic physical quantities viz. frequency and amplitude of a wave pattern,strain etc. Carryout measurement of wave pattern in a stretched string and the corresponding frequency values using a Melde's string apparatus.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	To what extend you are able to Determine the wavelength of monochromatic beam of light and thickness of micro-thin object etc. by forming Newton's rings pattern and an air wedge fringe pattern.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	To what extend you are able to Carryout the measurement of wavelength by diffraction of plane transmission grating and the spectra formed by a monochromatic beam of light and a laser.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	To what extend you are able to Determine the wavelength of a laser beam using the plane transmission grating.Measurement of numerical aperture of an optic fibre and evaluate the properties of a solar cell and LED through itsI-Vcharacteristics.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	To what extend you are able to Determine the velocity of ultrasonic waves in liquid using ultrasonic diffractometer.Compare the magnetic moment of various magnets and determine the magnetic flux density using deflection/vibration Magnetometer
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - PHL120 - ENGINEERING PHYSICS LAB

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3				2					2		3
CO2	3				2					3		
CO3	3				2					3		
CO4	3				2					3		
CO5	3				2					3		

CO->PSO MAPPING - PHL120 - ENGINEERING PHYSICS LAB

CO/PSO	PSO1	PSO2	PSO3
CO1	3		
CO2			
CO3			
CO4	1		
CO5			

COURSE->PO MAPPING - PHL120 - ENGINEERING PHYSICS LAB

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

PHL120/PO	3				2					3		3

COURSE->PSO MAPPING - PHL120 - ENGINEERING PHYSICS LAB

PHL120/PSO	PSO1	PSO2	PSO3
	3		

ESL130

Course Code	Course Name	L-T-P:C	Year of Introduction
ESL130	ELECTRICAL & ELECTRONICS WORKSHOP	0-0-2:1	2019

No.	Course Outcome - ESL130 - ELECTRICAL & ELECTRONICS WORKSHOP	Target
CO1	Demonstrate safety measures against electric shocks.	60%
CO2	Identify the tools used for electrical wiring, electrical accessories, wires, cables, batteries and standard symbols	60%
CO3	Develop the connection diagram, identify the suitable accessories and materials necessary for wiring simple lighting circuits for domestic buildings	60%
CO4	Identify and test various electronic components and equipments	60%
CO5	Draw circuit schematics with EDA tools	60%
CO6	Assemble and test electronic circuits on boards	60%

COURSE END SURVEY - ESL130 - ELECTRICAL & ELECTRONICS WORKSHOP

Sl.No	Questions & Options
CO1	To what extent were you able to practice safety measures against electric shock?
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO2	Are you able to identify the tools used for electrical wiring, electrical accessories, wires, cables, batteries and standard symbols?
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO3	To what extent were you able to draw the connection diagram, identify suitable materials needed and prepare a lighting wiring for a domestic building?
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO4	To what extent you are able to identify and test various electronic components and equipments?
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO5	To what extent you are able to draw circuit schematics with EDA tools?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO6	To what extent you were able to assemble and test electronic circuits on boards?
	Answer Choice- *Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful*

CO->PO MAPPING - ESL130 - ELECTRICAL & ELECTRONICS WORKSHOP

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1						1			3			
CO2									2			
CO3						3			2			
CO4	2								2			
CO5					3				3			
CO6									2			

CO->PSO MAPPING - ESL130 - ELECTRICAL & ELECTRONICS WORKSHOP

CO/PSO	PSO1	PSO2	PSO3
CO1			2
CO2			2
CO3			2
CO4			3
CO5	1		1
CO6		1	2

COURSE->PO MAPPING - ESL130 - ELECTRICAL & ELECTRONICS WORKSHOP

ESL130/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2				3	3			3			

COURSE->PSO MAPPING - ESL130 - ELECTRICAL & ELECTRONICS WORKSHOP

ESL130/PSO	PSO1	PSO2	PSO3
	1	1	3

HUN102

Course Code	Course Name	L-T-P:C	Year of Introduction
HUN102	PROFESSIONAL COMMUNICATION	2-0-2:4	2019

No.	Course Outcome - HUN102 - PROFESSIONAL COMMUNICATION	Target
CO1	Use vocabulary and language skills relevant to engineering as a profession.	65%

CO2	Analyze, interpret and effectively summarize a variety of textual content.	65%
CO3	Create effective technical presentations	65%
CO4	Discuss a given technical/ non-technical topic in a group setting and arrive at generalizations/consensus.	65%
CO5	Identify drawbacks in listening patterns and apply listening techniques for specific needs.	65%
CO6	Assess and create professional and technical documents that are clear and adhering to all the necessary conventions.	65%

COURSE END SURVEY - HUN102 - PROFESSIONAL COMMUNICATION

Sl.No	Questions & Options
CO1	To what extend can you develop and use vocabulary and language skills relevant to engineering profession?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO2	To what extend can you analyze, interpret and summarize a variety of textual content effectively?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO3	To what extend can you create effective technical presentations?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO4	To what extend can you discuss about a given technical/ non- technical topic in a group setting and arrive at a consensus??
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO5	To what extend can you identify drawbacks in listening patterns and apply listening techniques for specific needs?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO6	To what extend can you assess and create professional and technical documents that are clear and adhering to all the necessary conventions?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*

CO->PO MAPPING - HUN102 - PROFESSIONAL COMMUNICATION

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	1	1						3		3
CO2		2								3		3
CO3									3	3		
CO4										3		2
CO5		2							3	3		
CO6		2	2	2						3		

CO->PSO MAPPING - HUN102 - PROFESSIONAL COMMUNICATION

CO/PSO	PSO1	PSO2	PSO3
CO1	2	2	
CO2			1
CO3	1	2	3
CO4	2	3	
CO5		2	
CO6	2	2	2

COURSE->PO MAPPING - HUN102 - PROFESSIONAL COMMUNICATION

HUN102/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	1	2	2	2					3	3		3

COURSE->PSO MAPPING - HUN102 - PROFESSIONAL COMMUNICATION

HUN102/PSO	PSO1	PSO2	PSO3
	2	3	3

SEMESTER-3

MA201

Course Code	Course Name	L-T-P:C	Year of Introduction
MA201	Linear Algebra & Complex Analysis	3-1-0:4	2016

No.	Course Outcome - MA201 - Linear Algebra & Complex Analysis	Target
CO1	Identify and study analytic functions and harmonic functions	60%
CO2	Recognize conformal mapping and find regions that are mapped under certain transformations	60%
CO3	Evaluate contour integrals using the theory of complex variables	60%
CO4	Evaluate real definite integrals as an application of residue theorem	60%
CO5	Solve systems of equations	60%
CO6	Compute eigen values and diagonalise a matrix	60%

COURSE END SURVEY - MA201 - Linear Algebra & Complex Analysis

Sl.No	Questions & Options
CO1	TTo what extent are you able to identify and study analytic functions and harmonic functions ?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO2	To what extent are you able to recoganisze conformal mapping and find regions that are mapped under certain transformations ?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	To what extent are you able to evaluate contour integrals using the theory of complex variables ?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	To what extent are you able to evaluate real definite integrals as application of residue theorem ?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	To what extent are you able to solve systems of equations ?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO6	To what extent are you able to compute eigen values and diagonalise a matrix
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - MA201 - Linear Algebra & Complex Analysis

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2						3			3
CO2	3	3	2						3			3
CO3	3	3	2						3			3
CO4	3	3	2						3			3
CO5	3	3	2						3			3
CO6	3	3	2						3			3

CO->PSO MAPPING - MA201 - Linear Algebra & Complex Analysis

CO/PSO	PSO1	PSO2	PSO3
CO1	3	2	
CO2	3	2	
CO3	3	2	
CO4	3	2	
CO5	3	2	
CO6	3	2	

COURSE->PO MAPPING - MA201 - Linear Algebra & Complex Analysis

MA201/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	2						3			3

COURSE->PSO MAPPING - MA201 - Linear Algebra & Complex Analysis

MA201/PSO	PSO1	PSO2	PSO3
	3	2	

CS203

Course Code	Course Name	L-T-P:C	Year of Introduction
CS203	Switching Theory and Logic Design	3-1-0:4	2016

No.	Course Outcome - CS203 - Switching Theory and Logic Design	Target
CO1	Apply the basic concepts of Boolean algebra for the simplification and implementation of logic functions	75.25%
CO2	Apply algorithms for addition/subtraction operations on Binary, BCD and Floating Point Numbers	70.5%
CO3	Design of simple Combinational Circuits	70.5%
CO4	Design Sequential logic Circuits	70.5%
CO5	Use Hardware Description Language for describing simple logic circuits	70.5%

COURSE END SURVEY - CS203 - Switching Theory and Logic Design

Sl.No	Questions & Options
CO1	To what extent you are able to apply the basic concepts of Boolean algebra for the simplification and implementation of logic functions
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	To what extent you are able to apply algorithms for addition/subtraction operations on Binary, BCD and Floating Point Numbers
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	To what extent you are able to design of simple Combinational Circuits
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	To what extent you are able to design Sequential logic Circuits
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	to what extent you are able to use Hardware Description Language for describing simple logic circuits
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - CS203 - Switching Theory and Logic Design

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3		3								
CO2	2	2	2	3								

CO3	3	3	3	3					2			
CO4	3	3	2	3					2			
CO5	2		3	3								

CO->PSO MAPPING - CS203 - Switching Theory and Logic Design

CO/PSO	PSO1	PSO2	PSO3
CO1	3		
CO2	3	2	
CO3	3		
CO4	3		
CO5	2		

COURSE->PO MAPPING - CS203 - Switching Theory and Logic Design

CS203/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3					2			

COURSE->PSO MAPPING - CS203 - Switching Theory and Logic Design

CS203/PSO	PSO1	PSO2	PSO3
	3	2	

CS205

Course Code	Course Name	L-T-P:C	Year of Introduction
CS205	Data Structures	3-1-0:4	2016

No.	Course Outcome - CS205 - Data Structures	Target
CO1	Compare different programming methodologies and analyse performance of algorithms with asymptotic notation	55.5%
CO2	Define the fundamental concepts of data structures and exemplify different types of linked lists	55.5%
CO3	Use appropriate linear data structures to solve real world problems effectively	60%
CO4	Choose and manipulate data using non-linear data structures to design solutions for various applications	55%
CO5	Illustrate and compare various techniques for sorting and searching	60%
CO6	Appreciate various hashing techniques	55%

COURSE END SURVEY - CS205 - Data Structures

Sl.No	Questions & Options
CO1	Whether the student is able to Compare different programming methodologies and analyse performance of algorithms with asymptotic notation
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	To what extend you are able to define the fundamental concepts of data structures and exemplify different types of linked lists
	Answer Choice- *Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful*
CO3	Whether the student is able to use appropriate linear data structures to solve real world problems
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO4	To what extend the student is able to choose and manipulate data using non-linear data structures to design solutions for various applications
	Answer Choice- *Very frequently/Frequently/Rarely Very rarely/Never*
CO5	Whether the student is able to illustrate and compare various techniques for sorting and searching
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO6	Whether the student is able to choose various hashing techniques
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - CS205 - Data Structures

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2	1							3
CO2	3	3	3		2							2
CO3	3	3	3	2	3							2
CO4	3	3	3	3	2							2
CO5	3	3	1		3							2
CO6	2	2	3									2

CO->PSO MAPPING - CS205 - Data Structures

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	2		
CO3	3	3	
CO4	3	3	3
CO5	3		
CO6	2		

COURSE->PO MAPPING - CS205 - Data Structures

CS205/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3							3

COURSE->PSO MAPPING - CS205 - Data Structures

CS205/PSO	PSO1	PSO2	PSO3
	3	3	3

CS207

Course Code	Course Name	L-T-P:C	Year of Introduction
CS207	Electronics Devices & Circuits	3-0-0:3	2016

No.	Course Outcome - CS207 - Electronics Devices & Circuits	Target
CO1	Evaluate the fundamental concepts of electronic devices and circuits for engineering applications	66%
CO2	Design and analyze various analog circuits using electronic devices	71%
CO3	Demonstrate the fundamental concepts of Operational amplifiers	71%
CO4	Evaluate the diverse operations that operational amplifiers can perform in a wide range of applications	69%
CO5	Design and analyze a variety of electronic circuits/systems using different analog ICs	71%

COURSE END SURVEY - CS207 - Electronics Devices & Circuits

Sl.No	Questions & Options
CO1	To what extend you have grasped the fundamental concepts of electronic devices and circuits for engineering applications
	Answer Choice- *Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful*
CO2	Are you able to design and analyze analog circuits using electronic devices
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	Are you able to comprehend the fundamental concepts of Operational amplifiers
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO4	Are you able to understand and grasp the diverse operations and applications of OPAMP
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO5	To what extend you able to design and analyze electronic circuits using analog IC
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*

CO->PO MAPPING - CS207 - Electronics Devices & Circuits

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	2	2							
CO2	3	2	2	2	2							
CO3	3	2	2	2	2							
CO4	3	2	2	2	2							
CO5	3	2	2	2	2							3

CO->PSO MAPPING - CS207 - Electronics Devices & Circuits

CO/PSO	PSO1	PSO2	PSO3
CO1	3	1	
CO2	2	1	
CO3	2	1	
CO4	2	1	
CO5	2	1	

COURSE->PO MAPPING - CS207 - Electronics Devices & Circuits

CS207/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	2	2	2							3

COURSE->PSO MAPPING - CS207 - Electronics Devices & Circuits

CS207/PSO	PSO1	PSO2	PSO3
	3	1	

CS231

Course Code	Course Name	L-T-P:C	Year of Introduction
CS231	Data Structures Lab	0-0-3:1	2016

No.	Course Outcome - CS231 - Data Structures Lab	Target
CO1	Appreciate and implement the importance of structure and abstract data type.	60%
CO2	Implement various operations on linked list.	60%
CO3	Analyze and implement various linear and non- linear data stuctures such as stack, queue, trees, graphs, etc. to solve various computing problems.	60%
CO4	Apply data sturctures such as stack to solve application problems	60%
CO5	Choose appropriate searching and sorting techniques to solve real world problems.	60%

CO6	Identify and use a suitable data structure and algorithm to solve a real world problem.	60%

COURSE END SURVEY - CS231 - Data Structures Lab

Sl.No	Questions & Options
CO1	To what extend you are able to implement the abstract data type.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	to what extend you are able to Implement various operations on linked list.
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO3	To what extend you are able to implement various linear and non- linear data structures
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	whether the student is able to Apply data structures such as stack to solve application problems
	Answer Choice- *Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful*
CO5	Whether the student is able to Choose appropriate searching and sorting techniques to solve real world problems
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO6	To what extend the student is able to identify and use a suitable data structure and algorithm to solve a real world problem.
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*

CO->PO MAPPING - CS231 - Data Structures Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3					3	3	3		
CO2	2	2	3					3	3	3		
CO3	3	3	3		3			3	3	3		
CO4	2	3	3					3	3	3		
CO5	3	3	3	3	3			3	3	3		1
CO6	3	2	3		3	2		3	3	3		2

CO->PSO MAPPING - CS231 - Data Structures Lab

CO/PSO	PSO1	PSO2	PSO3
CO1	2		3
CO2	3		3
CO3	3	2	3
CO4	2		3

CO5	3	2	3
CO6	3	2	3

COURSE->PO MAPPING - CS231 - Data Structures Lab

CS231/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	2		3	3	3		2

COURSE->PSO MAPPING - CS231 - Data Structures Lab

CS231/PSO	PSO1	PSO2	PSO3
	3	2	3

CS233

Course Code	Course Name	L-T-P:C	Year of Introduction
CS233	Electronics Circuits Lab	0-0-3:1	2016

No.	Course Outcome - CS233 - Electronics Circuits Lab	Target
CO1	Identify basic electronic components, design and develop electronic circuits.	55%
CO2	Design and demonstrate functioning of various discrete analog circuits	65%
CO3	To gain hands-on experience so that they are able to put theoretical concepts to practice.	60%
CO4	Be familiar with computer simulation of electronic circuits and to use it proficiently for design and development of electronic circuits	65%
CO5	Acquire skills in designing and testing analog integrated circuits using OPAMP	70%
CO6	Communicate effectively the scientific procedures and explanations in formal technical presentations/reports.	75%

COURSE END SURVEY - CS233 - Electronics Circuits Lab

Sl.No	Questions & Options
CO1	To what extent you are able to Identify basic electronic components, design and develop electronic circuits.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	To what extent you are able to Design and demonstrate functioning of various discrete analog circuits ?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	To what extent you are able to To gain hands-on experience so that they are able to put theoretical concepts to practice?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO4	To what extent you are able to Be familiar with computer simulation of electronic circuits and to use it proficiently for design and development of electronic circuits?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	To what extent you are able to Acquire skills in designing and testing analog integrated circuits using OPAMP?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO6	To what extent you are able to Communicate effectively the scientific procedures and provide explanations in formal technical presentations/reports.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - CS233 - Electronics Circuits Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2				3	3	3		1
CO2	3	3	3	2				3	3	3		
CO3	3	3	3	2				3	3	3		3
CO4	3	3	3	2				3	3	3		2
CO5	3	2	3	2				3	3	3		
CO6	1	2	2	3	3			3	3	3		2

CO->PSO MAPPING - CS233 - Electronics Circuits Lab

CO/PSO	PSO1	PSO2	PSO3
CO1	3		1
CO2	3		1
CO3	3	2	1
CO4	3		1
CO5	3		1
CO6	3		1

COURSE->PO MAPPING - CS233 - Electronics Circuits Lab

CS233/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3			3	3	3		3

COURSE->PSO MAPPING - CS233 - Electronics Circuits Lab

CS233/PSO	PSO1	PSO2	PSO3
	3	2	1

CS201

Course Code	Course Name	L-T-P:C	Year of Introduction
CS201	Discrete Computational Structures	3-1-0:4	2016

No.	Course Outcome - CS201 - Discrete Computational Structures	Target
CO1	Students will be able to develop an understanding of set theory to differentiate relations and functions	65%
CO2	Students will be able to classify recurrence relations to find solutions and master the basics of permutations and combinations.	60%
CO3	Students will be able to understand the process and properties of algebraic systems.	60%
CO4	Students will be able to outline the basic features of lattices and boolean algebra.	60%
CO5	Students will be able to solve problems using propositional logic.	60%
CO6	Students will be able to apply predicate logic and quantifications.	60%

COURSE END SURVEY - CS201 - Discrete Computational Structures

Sl.No	Questions & Options
CO1	To what extent you are able to develop an understanding of set theory to differentiate relations and functions
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO2	To what extent you are able to classify recurrence relations to find solutions and master the basics of permutations and combinations.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO3	To what extent you are able to understand the process and properties of algebraic systems.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	To what extent you are able to outline the basic features of lattices and boolean algebra.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO5	To what extent you are able to solve problems using propositional logic.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO6	To what extent you are able to apply predicate logic and quantifications.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - CS201 - Discrete Computational Structures

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2										3
CO2	3	2	2									3

CO3	3	2	2	2								3
CO4	3	2										3
CO5	3	3	2	3								3
CO6	3	3	2	3								3

CO->PSO MAPPING - CS201 - Discrete Computational Structures

CO/PSO	PSO1	PSO2	PSO3
CO1	3		
CO2	3	2	
CO3	3	1	
CO4	3	1	
CO5	3	2	
CO6	3	2	

COURSE->PO MAPPING - CS201 - Discrete Computational Structures

CS201/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	2	3								3

COURSE->PSO MAPPING - CS201 - Discrete Computational Structures

CS201/PSO	PSO1	PSO2	PSO3
	3	2	

HS200

Course Code	Course Name	L-T-P:C	Year of Introduction
HS200	Life Skills/Business Economics	3-0-0:3	2016

No.	Course Outcome - HS200 - Life Skills/Business Economics	Target
CO1	Identify concepts in economics and interpret their role in managerial economics which will be useful in their profession and business.	60%
CO2	Analyze and interpret demand and supply of goods and services in the economy and its influence and execute production analysis.	60%
CO3	Recognize the effect of trade cycle in business and analyze various market situations.	60%
CO4	Measure National Income and evaluate measures taken by RBI in controlling inflation.	60%
CO5	Analyze, compare and justify investment decisions based on capital budgeting methods.	61%

CO6	Prepare and analyze balance sheets, interpret taxation system in India, compare different sources of capital for firms and carry out demand forecast.	62%

COURSE END SURVEY - HS200 - Life Skills/Business Economics

Sl.No	Questions & Options
CO1	To what extent are you able to identify concepts in economics and interpret their role in managerial economics which will be useful in their profession and business ?
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO2	To what extent are you able to analyze and interpret demand and supply of goods and services in the economy and its influence and execute production analysis ?
	Answer Choice- *Very advanced/Advanced/Proficient/Basic/ Minimal*
CO3	To what extent are you able to recognize the effect of trade cycle in business and analyze various market situations ?
	Answer Choice- *Very advanced/Advanced/Proficient/Basic/ Minimal*
CO4	To what extent are you able to measure National Income and evaluate measures taken by RBI in controlling inflation ?
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO5	To what extent are you able to analyze, compare and justify investment decisions based on capital budgeting methods ?
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO6	To what extent are you able to prepare and analyze balance sheets, interpret taxation system in India, compare different sources of capital for firms and carry out demand forecast ?
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*

CO->PO MAPPING - HS200 - Life Skills/Business Economics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2			3	2	1	3	2	3	2
CO2	2	2	1			3	1	1	2		3	2
CO3						1	2	3	2	1	3	1
CO4			1	2		3	1	3	1		3	1
CO5	2	2				1	1	1	2	2	3	1
CO6	3	2			3	2	2	3	2	1	3	1

CO->PSO MAPPING - HS200 - Life Skills/Business Economics

CO/PSO	PSO1	PSO2	PSO3
CO1	1	1	3
CO2	1	1	3

CO3		1	3
CO4			
CO5			3
CO6	1		3

COURSE->PO MAPPING - HS200 - Life Skills/Business Economics

HS200/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2	2	2	3	3	2	3	3	2	3	2

COURSE->PSO MAPPING - HS200 - Life Skills/Business Economics

HS200/PSO	PSO1	PSO2	PSO3
	1	1	3

CST201

Course Code	Course Name	L-T-P:C	Year of Introduction
CST201	Data Structures	3-1-0:4	2019

No.	Course Outcome - CST201 - Data Structures	Target
CO1	Design an algorithm for a computational task and calculate the time/space complexities of that algorithm	61%
CO2	Use appropriate linear data structures to represent a data item required to be processed to solve real world problems effectively	61%
CO3	Choose and manipulate data using non-linear data structures to design solutions for various applications	61%
CO4	Appreciate various hashing techniques to enable efficient access of data in the given set.	61%
CO5	Illustrate and compare various techniques for sorting to be used in specific circumstances	61%

COURSE END SURVEY - CST201 - Data Structures

Sl.No	Questions & Options
CO1	Whether the student is able to design an algorithm for a computational task and calculate the time/space complexities of that algorithm
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO2	To what extend you are able to use appropriate linear data structures to solve real world problems effectively
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO3	To what extend you are able to choose and manipulate data using non-linear data structures to design solutions for various applications

	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	To what extend you are able to appreciate various hashing techniques to enable efficient access of data in the given set.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO5	Whether the student is able to illustrate and compare various techniques for sorting to be used in specific circumstances
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - CST201 - Data Structures

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2	1							3
CO2	3	3	3	2	3							2
CO3	3	3	3	3	2							2
CO4	2	2	3									2
CO5	3	3	1		3							2

CO->PSO MAPPING - CST201 - Data Structures

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	
CO3	3	3	3
CO4	2		
CO5	3		

COURSE->PO MAPPING - CST201 - Data Structures

CST201/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3							3

COURSE->PSO MAPPING - CST201 - Data Structures

CST201/PSO	PSO1	PSO2	PSO3
	3	3	3

CST203

Course Code	Course Name	L-T-P:C	Year of Introduction
CST203	LOGIC SYSTEM DESIGN	3-1-0:4	2019

No.	Course Outcome - CST203 - LOGIC SYSTEM DESIGN	Target
CO1	To understand number representation and conversion between different representation in digital electronic circuits.	61%
CO2	Apply the basic concepts of Boolean algebra for the simplification and implementation of logic functions	61%
CO3	Analyze, design and implement combinational logic circuits.	61%
CO4	Analyze, design and implement sequential logic circuits.	61%
CO5	Apply algorithms to perform addition and subtraction on binary,BCD and floating point	61%

COURSE END SURVEY - CST203 - LOGIC SYSTEM DESIGN

Sl.No	Questions & Options
CO1	How will you able to understand number representation and conversion between different representation in digital electronic circuits.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	How far you apply the basic concepts of Boolean algebra for the simplification and implementation of logic functions
	Answer Choice- *Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful*
CO3	How will you able to Analyze, design and implement combinational logic circuits.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	How will you able to analyze, design and implement sequential logic circuits.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	How far you able to apply algorithms to perform addition and subtraction on binary,BCD and floating point
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - CST203 - LOGIC SYSTEM DESIGN

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	1								
CO2	3	2	2	1								
CO3	1	3	3									
CO4	1	2	3									
CO5	3		3	2	3							

CO->PSO MAPPING - CST203 - LOGIC SYSTEM DESIGN

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	1

CO2	3	1	3
CO3	2		2
CO4	3		
CO5	1		1

COURSE->PO MAPPING - CST203 - LOGIC SYSTEM DESIGN

CST203/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	2	3							

COURSE->PSO MAPPING - CST203 - LOGIC SYSTEM DESIGN

CST203/PSO	PSO1	PSO2	PSO3
	3	3	3

CST205

Course Code	Course Name	L-T-P:C	Year of Introduction
CST205	OBJECT ORIENTED PROGRAMMING USING JAVA	3-1-0:4	2019

No.	Course Outcome - CST205 - OBJECT ORIENTED PROGRAMMING USING JAVA	Target
CO1	Develop Java programs using the object oriented concepts - classes, objects, constructors, data hiding, inheritance and polymorphism	60.1%
CO2	Utilise datatypes, operators, control statements, built in packages & interfaces, Input/ Output Streams and Files in Java to develop programs	60.1%
CO3	Illustrate how robust programs can be written in Java using exception handling mechanism	60.1%
CO4	Develop application programs in Java using multithreading and database connectivity	60.1%
CO5	Develop Graphical User Interface based application programs by utilising event handling features and Swing in Java	60.1%

COURSE END SURVEY - CST205 - OBJECT ORIENTED PROGRAMMING USING JAVA

Sl.No	Questions & Options
CO1	How far you are able to Develop Java programs using the object oriented concepts - classes, objects, constructors, data hiding, inheritance and polymorphism?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO2	How far you are able to utilise datatypes, operators, control statements, built in packages & interfaces, Input/ Output Streams and Files in Java to develop programs?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO3	How far you are able to illustrate how robust programs can be written in Java using exception handling mechanism?

	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	How far you are able to Develop application programs in Java using multithreading and database connectivity?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO5	How far you are able to develop Graphical User Interface based application programs by utilising event handling features and Swing in Java?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - CST205 - OBJECT ORIENTED PROGRAMMING USING JAVA

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2	3			3		3		3
CO2	3	3	3	3	3			2		3		3
CO3	3	3	3	3	3			3		3		3
CO4	3	3	3	3	3			2		3		3
CO5	3	3	3	3	3					3	2	3

CO->PSO MAPPING - CST205 - OBJECT ORIENTED PROGRAMMING USING JAVA

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	2
CO2	3	3	2
CO3	3	3	3
CO4	3	3	3
CO5	3	3	3

COURSE->PO MAPPING - CST205 - OBJECT ORIENTED PROGRAMMING USING JAVA

CST205/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3			3		3	2	3

COURSE->PSO MAPPING - CST205 - OBJECT ORIENTED PROGRAMMING USING JAVA

CST205/PSO	PSO1	PSO2	PSO3
	3	3	3

EST200

Course Code	Course Name	L-T-P:C	Year of Introduction
EST200	Design & Engineering	2-0-0:2	2019

COURSE END SURVEY - EST200 - Design & Engineering
CO->PO MAPPING - EST200 - Design & Engineering

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - EST200 - Design & Engineering

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - EST200 - Design & Engineering

EST200/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - EST200 - Design & Engineering

EST200/PSO	PSO1	PSO2	PSO3

EST200

Course Code	Course Name	L-T-P:C	Year of Introduction
EST200	Design & Engineering	2-0-0:2	2019

No.	Course Outcome - EST200 - Design & Engineering	Target
CO1	Understand the steps involved in the design process.	67%
CO2	Apply design thinking while learning and practicing engineering.	67%
CO3	Understand the various design communication mechanisms.	67%
CO4	Understand fundamental design engineering concepts.	67%
CO5	Apply expediency, economics and sustainability in Design Engineering.	67%

COURSE END SURVEY - EST200 - Design & Engineering

Sl.No	Questions & Options
CO1	To what extend you are able to understand the various steps involved in the design? process
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO2	I am able to apply design thinking while practicing engineering.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	To what extend you are able to understand the various design communication mechanisms?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	I understood fundamental design engineering concepts.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO5	To what extend you are able to apply expediency, economics and sustainability in Design Engineering?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - EST200 - Design & Engineering

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2	3	3	3	2	2	3	2	2
CO2	3	3	3	3	3	3	3	2	3	3	2	2
CO3	2	2	3	2	3	3	3	2	3	3	2	2
CO4	3	3	3	2	2	3	3	2	3	3	2	2
CO5	2	2	2	2	1	3	3	3	2	3	3	2

CO->PSO MAPPING - EST200 - Design & Engineering

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	2	3
CO3	2	2	2
CO4	3	3	3
CO5	2	2	2

COURSE->PO MAPPING - EST200 - Design & Engineering

EST200/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	3	3	3	3	3	3	2

COURSE->PSO MAPPING - EST200 - Design & Engineering

EST200/PSO	PSO1	PSO2	PSO3
	3	3	3

MCN201

Course Code	Course Name	L-T-P:C	Year of Introduction
MCN201	Sustainable Engineering	2-0-0:0	2019

COURSE END SURVEY - MCN201 - Sustainable Engineering
CO->PO MAPPING - MCN201 - Sustainable Engineering

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - MCN201 - Sustainable Engineering

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - MCN201 - Sustainable Engineering

MCN201/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - MCN201 - Sustainable Engineering

MCN201/PSO	PSO1	PSO2	PSO3

MCN201

Course Code	Course Name	L-T-P:C	Year of Introduction
MCN201	Sustainable Engineering	2-0-0:0	2019

No.	Course Outcome - MCN201 - Sustainable Engineering	Target
CO1	Perceive the relevance and concept of sustainability and associated global initiatives	61%
CO2	Expound on the different types of environmental pollution problems and their sustainable solutions	61%
CO3	Be abreast of environmental regulations and standards	61%
CO4	Outline concepts of conventional and non-conventional energy	61%
CO5	Demonstrate sustainable practices using engineering knowledge	61%

COURSE END SURVEY - MCN201 - Sustainable Engineering

Sl.No	Questions & Options
CO1	The Sustainable Development Goals form a road map for the future..
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	Is global warming linked to climate change ?
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO3	EIA is a necessary criteria during the course of greenfild projects.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	Is renewable energy penetrating the global energy market ?
	Answer Choice- *Very frequently/Frequently/Rarely Very rarely/Never*
CO5	Are sustainable habitats a part of urban life ?
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*

CO->PO MAPPING - MCN201 - Sustainable Engineering

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	2	2	1	3	3	3	2	2	2	2

CO2	2	2	2	2	3	3	3	2	2	1	2	2
CO3	2	1	3	1	2	3	3	2	2	1	2	2
CO4	2	1	2	1	2	3	3	3	2	2	1	3
CO5	1	2	2	2	3	3	3	3	3	3	1	3

CO->PSO MAPPING - MCN201 - Sustainable Engineering

CO/PSO	PSO1	PSO2	PSO3
CO1	2	1	2
CO2	3	2	2
CO3	2	2	2
CO4	2	2	1
CO5	3	2	3

COURSE->PO MAPPING - MCN201 - Sustainable Engineering

MCN201/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	2	3	2	3	3	3	3	3	3	2	3

COURSE->PSO MAPPING - MCN201 - Sustainable Engineering

MCN201/PSO	PSO1	PSO2	PSO3
	3	2	3

MAT203

Course Code	Course Name	L-T-P:C	Year of Introduction
MAT203	DISCRETE MATHEMATICAL STRUCTURES	3-1-0:4	2019

No.	Course Outcome - MAT203 - DISCRETE MATHEMATICAL STRUCTURES	Target
CO1	Check the validity of predicates in Propositional and Quantified Propositional Logic using truth tables, deductive reasoning and inference theory on Propositional Logic	53%
CO2	Solve counting problems by applying the elementary counting techniques - Rule of Sum, Rule of Product, Permutation, Combination, Binomial Theorem, Pigeonhole Principle and Principle of Inclusion and Exclusion	52%
CO3	Classify binary relations into various types and apply these types of binary relations and use them in the application of Partially Ordered Sets and Lattices in Computer Science	50%
CO4	Explain Generating Functions and solve First Order and Second Order Linear Recurrence Relations with Constant Coefficients	55%
CO5	Illustrate the abstract algebraic systems - Semigroups, Monoids, Groups, Homomorphism and Isomorphism of Monoids and Groups	45%

COURSE END SURVEY - MAT203 - DISCRETE MATHEMATICAL STRUCTURES

Sl.No	Questions & Options
CO1	To what extent are you able to check the validity of predicates in Propositional and Quantified Propositional Logic using truth tables, deductive reasoning and inference theory on Propositional Logic
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	To what extent are you able to solve counting problems by applying the elementary counting techniques - Rule of Sum, Rule of Product, Permutation, Combination, Binomial Theorem, Pigeonhole Principle and Principle of Inclusion and Exclusion
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	To what extent are you able to solve counting problems by applying the elementary counting techniques - Rule of Sum, Rule of Product, Permutation, Combination, Binomial Theorem, Pigeonhole Principle and Principle of Inclusion and Exclusion
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	To what extent are you able to explain Generating Functions and solve First Order and Second Order Linear Recurrence Relations with Constant Coefficients
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	To what extent are you able to Illustrate the abstract algebraic systems - Semigroups, Monoids, Groups, Homomorphism and Isomorphism of Monoids and Groups
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - MAT203 - DISCRETE MATHEMATICAL STRUCTURES

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3								2
CO2	3	3	3	3								2
CO3	3	3	3	3		1						2
CO4	3	3	3	3								2
CO5	3	3	3	3								2

CO->PSO MAPPING - MAT203 - DISCRETE MATHEMATICAL STRUCTURES

CO/PSO	PSO1	PSO2	PSO3
CO1	3		
CO2	3		
CO3	3		
CO4	3		
CO5	3		

COURSE->PO MAPPING - MAT203 - DISCRETE MATHEMATICAL STRUCTURES

MAT203/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3		1						2

COURSE->PSO MAPPING - MAT203 - DISCRETE MATHEMATICAL STRUCTURES

MAT203/PSO	PSO1	PSO2	PSO3
	3		

CSL201

Course Code	Course Name	L-T-P:C	Year of Introduction
CSL201	Data Structures Lab	0-0-3:2	2019

No.	Course Outcome - CSL201 - Data Structures Lab	Target
CO1	Design and implement time/space efficient program using arrays to provide necessary functionalities meeting a given set of user requirements	61%
CO2	Design and Implement time/space efficient program to sort a list of records based on a given key in the record	61%
CO3	Design and implement an efficient data structure to represent given data	61%
CO4	Design and implement a time/space efficient program to convert an arithmetic expression from one notation to another	61%
CO5	Design and implement a program using linked lists to simulate Memory Allocation and Garbage Collection	61%
CO6	Design and implement time/space efficient program using trees and graphs to provide necessary functionalities meeting a given set of user requirements	61%

COURSE END SURVEY - CSL201 - Data Structures Lab

Sl.No	Questions & Options
CO1	To what extend you are able to design and implement time/space efficient program using arrays to provide necessary functionalities meeting a given set of user requirements
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO2	To what extend you are able toDesign and Implement time/space efficient program to sort a list of records based on a given key in the record
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO3	To what extend you are able to Design and implement an efficient data structure to represent given data
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	To what extend you are able to Design and implement a time/space efficient program to convert an arithmetic expression from one notation to another
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO5	To what extend you are able to Design and implement a program using linked lists to simulate Memory Allocation and Garbage Collection
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO6	To what extend you are able to design and implement time/space efficient program using trees and graphs to provide necessary functionalities meeting a given set of user requirements
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - CSL201 - Data Structures Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2	2	1	2	3	3	3		3
CO2	3	3	3		3			3	3	3		2
CO3	3	3	3	2	3	2		3	3	3	2	3
CO4	3	3	3		3			3	3	3		2
CO5	3	3	3	2	2			3	3	3	2	3
CO6	3	3	3	3	3			3	3	3		3

CO->PSO MAPPING - CSL201 - Data Structures Lab

CO/PSO	PSO1	PSO2	PSO3
CO1	3	2	3
CO2	3	2	3
CO3	3	3	3
CO4	3	2	3
CO5	3	1	3
CO6	3	3	3

COURSE->PO MAPPING - CSL201 - Data Structures Lab

CSL201/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	2	2	3	3	3	2	3

COURSE->PSO MAPPING - CSL201 - Data Structures Lab

CSL201/PSO	PSO1	PSO2	PSO3
	3	3	3

CSL203

Course Code	Course Name	L-T-P:C	Year of Introduction

CSL203	OBJECT ORIENTED PROGRAMMING USING JAVA (IN JAVA)	0-0-3:2	2019

No.	Course Outcome - CSL203 - OBJECT ORIENTED PROGRAMMING USING JAVA (IN JAVA)	Target
CO1	Implement the Object Oriented concepts - constructors, inheritance, method overloading & overriding and polymorphism in Java .	61%
CO2	Implement programs in Java which use datatypes, operators, control statements, built in packages & interfaces, Input/Output streams and Files	61%
CO3	Implement robust application programs in Java using exception handling	61%
CO4	Implement application programs in Java using multithreading and database connectivity	61%
CO5	Implement Graphical User Interface based application programs by utilizing event handling features and Swing in Java	61%

COURSE END SURVEY - CSL203 - OBJECT ORIENTED PROGRAMMING USING JAVA (IN JAVA)

Sl.No	Questions & Options
CO1	How far you are able to Implement the Object Oriented concepts - constructors, inheritance, method overloading & overriding and polymorphism in Java ?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO2	How far you are able to Implement programs in Java which use datatypes, operators, control statements, built in packages & interfaces, Input/Output streams and Files?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO3	How far you are able to implement robust application programs in Java using exception handling?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	How far you are able to implement application programs in Java using multithreading and database connectivity?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO5	How far you are able to implement Graphical User Interface based application programs by utilizing event handling features and Swing in Java?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - CSL203 - OBJECT ORIENTED PROGRAMMING USING JAVA (IN JAVA)

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	3	3	3		2	3	3	2		3
CO2	3	2	3	3	2			3	3	3		3
CO3	2	3	3	3	3	3	2	3	3	3	3	3
CO4	2	3	3	3	2			3	3	2		3
CO5	3	3	3	2	2	3		3	3	3	3	3

CO->PSO MAPPING - CSL203 - OBJECT ORIENTED PROGRAMMING USING JAVA (IN JAVA)

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	2	3
CO3	3	3	3
CO4	3	2	3
CO5	3	3	3

COURSE->PO MAPPING - CSL203 - OBJECT ORIENTED PROGRAMMING USING JAVA (IN JAVA)

CSL203/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	3	2	3	3	3	3	3

COURSE->PSO MAPPING - CSL203 - OBJECT ORIENTED PROGRAMMING USING JAVA (IN JAVA)

CSL203/PSO	PSO1	PSO2	PSO3
	3	3	3

SEMESTER-4

MA202

Course Code	Course Name	L-T-P:C	Year of Introduction
MA202	Probability Distributions, Transforms and Numerical Methods	3-1-0:4	2016

No.	Course Outcome - MA202 - Probability Distributions, Transforms and Numerical Methods	Target
CO1	Apply the concept of random variables, probability distributions, specific discrete distributions in various Engineering problems.	62%
CO2	Utilize specific continuous distributions in various Engineering problems.	65%
CO3	Use Laplace transforms for engineering applications.	65%
CO4	Implement Fourier transforms for engineering applications.	65%
CO5	Solve various engineering problems using numerical methods for solution of equations and interpolation.	65%
CO6	Employ numerical methods for integration, differentiation and solution of differential equations	65%

COURSE END SURVEY - MA202 - Probability Distributions, Transforms and Numerical Methods

Sl.No	Questions & Options
CO1	To what extent are you able to apply the concept of random variables, probability distributions, specific discrete distributions in various Engineering problems ?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO2	To what extent are you able to utilize specific continuous distributions in various Engineering problems?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	To what extent are you able to use Laplace transforms for engineering applications?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	To what extent are you able to implement Fourier transforms for engineering applications.?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	To what extent are you able to solve various engineering problems using numerical methods for solution of equations and interpolation?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO6	To what extent are you able to employ numerical methods for integration, differentiation and solution of differential equations?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - MA202 - Probability Distributions, Transforms and Numerical Methods

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2						2			3
CO2	3	3	2						2			3
CO3	3	3	2						2			3
CO4	3	3	2						2			3
CO5	3	3	2						2			3
CO6	3	3	2						2			3

CO->PSO MAPPING - MA202 - Probability Distributions, Transforms and Numerical Methods

CO/PSO	PSO1	PSO2	PSO3
CO1	3	2	
CO2	3	2	
CO3	3	2	
CO4	3	2	
CO5	3	2	
CO6	3	2	

COURSE->PO MAPPING - MA202 - Probability Distributions, Transforms and Numerical Methods

MA202/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	2						2			3

COURSE->PSO MAPPING - MA202 - Probability Distributions, Transforms and Numerical Methods

MA202/PSO	PSO1	PSO2	PSO3
	3	2	

CS202

Course Code	Course Name	L-T-P:C	Year of Introduction
CS202	Computer Organization and Architecture	3-1-0:4	2016

No.	Course Outcome - CS202 - Computer Organization and Architecture	Target
CO1	Identify the basic structure and functional units of a computer and analyze the effect of addressing modes on the execution time of a program	61%
CO2	Identify the roles of various functional units of a computer in instruction execution and apply different algorithms for arithmetic operations	61%
CO3	Select suitable interfacing standards to transfer data to/from I/O devices	61%
CO4	Classify among the different memory systems available	65.5%
CO5	Design processing unit using the concepts of ALU design.	61%
CO6	Compare different control organizations available to generate control signals	61%

COURSE END SURVEY - CS202 - Computer Organization and Architecture

Sl.No	Questions & Options
CO1	To what extent you are able to identify the basic structure and functional units of a computer and analyze the effect of addressing modes on the execution time of a program
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO2	To what extent you are able to identify the roles of various functional units of a computer in instruction execution and apply different algorithms for arithmetic operations
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO3	To what extent you are able to select suitable interfacing standards to transfer data to/from I/O devices
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	To what extent you are able to classify among the different memory systems available
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO5	To what extent you are able to design processing unit using the concepts of ALU design
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO6	To what extent you are able to compare the different control organization available to generate the control signals

	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - CS202 - Computer Organization and Architecture

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2									2
CO2	3	3			2							2
CO3	3	2	1		2							2
CO4	3	2	2									2
CO5	3	3	3	3								
CO6	3	2	1		2							2

CO->PSO MAPPING - CS202 - Computer Organization and Architecture

CO/PSO	PSO1	PSO2	PSO3
CO1	3		
CO2	3		2
CO3	3		2
CO4			
CO5	2	3	
CO6	2	3	

COURSE->PO MAPPING - CS202 - Computer Organization and Architecture

CS202/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	2							2

COURSE->PSO MAPPING - CS202 - Computer Organization and Architecture

CS202/PSO	PSO1	PSO2	PSO3
	3	3	2

CS204

Course Code	Course Name	L-T-P:C	Year of Introduction
CS204	Operating Systems	3-1-0:4	2016

No.	Course Outcome - CS204 - Operating Systems	Target
CO1	Identify the significance of operating system in computing devices and describe the various structures of operating systems.	63.5%

CO2	Apply Inter-process Communication for the communication between application programs.	61%
CO3	Compare and illustrate various synchronization problems with its solution using semaphores and monitors	61%
CO4	Analyse the various process scheduling algorithms and understand the concepts of deadlock.	63%
CO5	Explain virtual memory concept and different memory management schemes .	61%
CO6	Describe file management systems and appreciate the need of access control and protection in an operating system.	62%

COURSE END SURVEY - CS204 - Operating Systems

Sl.No	Questions & Options
CO1	The course helped me to Identify the significance of operating system in computing devices and describe the various structures of operating systems.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	The course helped me to Apply Inter Process Communication for the communication between application programs.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	The course helped me to Compare and illustrate various synchronization problems with its solution using semaphores and monitors
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	The course helped me to Demonstrate the deadlock avoidance & detection solutions and various process scheduling algorithm analysis.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	The course helped me to Explain Virtual memory concept and different memory management schemes .
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO6	The course helped me to Describe the file management and appreciate the need of access control and protection in an operating system.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - CS204 - Operating Systems

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3											2
CO2	3	2		3	2							3
CO3	3	3		1	2							2
CO4	3	2	3	3	2							2
CO5	3	2										3
CO6	3	2	2	2	3			3				3

CO->PSO MAPPING - CS204 - Operating Systems

CO/PSO	PSO1	PSO2	PSO3
CO1	2	3	
CO2	3	3	
CO3	3	3	
CO4	3	3	
CO5	2	3	
CO6	3	3	3

COURSE->PO MAPPING - CS204 - Operating Systems

CS204/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3			3				3

COURSE->PSO MAPPING - CS204 - Operating Systems

CS204/PSO	PSO1	PSO2	PSO3
	3	3	3

CS206

Course Code	Course Name	L-T-P:C	Year of Introduction
CS206	Object Oriented Design and Programming	2-1-0:3	2016

No.	Course Outcome - CS206 - Object Oriented Design and Programming	Target
CO1	Familiarize the basic concept of object oriented design using Unified Modelling Language.	62%
CO2	Apply various Java programming concepts.	63%
CO3	Apply object oriented principles such as encapsulation, inheritance, and polymorphism to large scale software solutions	63%
CO4	Design and develop reliable and robust object oriented solutions using Java.	64%
CO5	Develop database applications with an event driven GUI.	63%
CO6	Choose an Object oriented approach to develop software applications	63%

COURSE END SURVEY - CS206 - Object Oriented Design and Programming

Sl.No	Questions & Options
CO1	To what extent can you recognise the benefits of object oriented design using Unified Modelling Language in modern application development.

	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	To what extent can you describe the various Java programming concepts
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	To what extent can you apply object oriented principles such as encapsulation, inheritance, and polymorphism to large scale software solutions
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	To what extent can you design and develop reliable and robust object oriented solutions using Java.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	To what extent can you develop database applications with an event driven GUI.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO6	To what extent can you choose an object oriented approach to develop software applications
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - CS206 - Object Oriented Design and Programming

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	3		1					3		3
CO2	3		3	3	3							3
CO3	3		3		3							3
CO4	2		3		2	3						3
CO5	3		3		3				2			3
CO6	3		3		3				2			3

CO->PSO MAPPING - CS206 - Object Oriented Design and Programming

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3		
CO3	3		
CO4	3	3	3
CO5	3		3
CO6	3		3

COURSE->PO MAPPING - CS206 - Object Oriented Design and Programming

CS206/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	3			2	3		3

COURSE->PSO MAPPING - CS206 - Object Oriented Design and Programming

CS206/PSO	PSO1	PSO2	PSO3
	3	3	3

CS208

Course Code	Course Name	L-T-P:C	Year of Introduction
CS208	Principles of Data Base Design	2-1-0:3	2016

No.	Course Outcome - CS208 - Principles of Data Base Design	Target
CO1	Categorize the terminologies, features, classifications, and characteristics embodied in database systems.	64%
CO2	Model an ER diagram using applications, data requirements and design database schemas based on the conceptual model.	61%
CO3	Formulate solutions to a broad range of queries using relational algebra and SQL.	65.5%
CO4	Apply different normalization by understanding the techniques in relational database design.	62%
CO5	Examine fundamental principles of data organization, query evaluation technique and query optimization.	63%
CO6	Apply solutions for transaction processing issues and summarize the latest trends in databases	63%

COURSE END SURVEY - CS208 - Principles of Data Base Design

Sl.No	Questions & Options
CO1	To what extent you are able to categorize the terminologies, features, classifications of Data Base systems?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	To what extent you are able to model an ER diagram using applications data requirements and design database schema based on the conceptual model.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	To what extent you are able to formulate queries using relational algebra and SQL.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	To what extent you are able to apply different normalization techniques in relational database
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	To what extent you are able to describe data organization techniques (different indexing)
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO6	To what extent you are able to demonstrate and explain transaction processing issues and latest trends in databases

	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - CS208 - Principles of Data Base Design

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2										2
CO2	3	3	3	2	2				2			2
CO3	3	3	3	3	3							3
CO4	3	3	3	3	2							3
CO5	3	2	2	2	2							2
CO6	3	2	2	2	3							3

CO->PSO MAPPING - CS208 - Principles of Data Base Design

CO/PSO	PSO1	PSO2	PSO3
CO1	3		
CO2	3	2	2
CO3	3	3	3
CO4	3	3	3
CO5	3		2
CO6	3	3	3

COURSE->PO MAPPING - CS208 - Principles of Data Base Design

CS208/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3				2			3

COURSE->PSO MAPPING - CS208 - Principles of Data Base Design

CS208/PSO	PSO1	PSO2	PSO3
	3	3	3

CS232

Course Code	Course Name	L-T-P:C	Year of Introduction
CS232	Free and Open Source Software Lab	0-0-3:1	2016

No.	Course Outcome - CS232 - Free and Open Source Software Lab	Target
CO1	Identify and apply various Linux commands	61%
CO2	Develop shell scripts and GUI for specific requirements	60%

CO3	Apply tools like GIT for version control	55%
CO4	Perform basic level application deployment, kernel configuration and installation, packet management and installation etc.	56%
CO5	Work as group to formulate scripts for text processing and regular expression using Perl, Awk commands to solve real world problems.	65%

COURSE END SURVEY - CS232 - Free and Open Source Software Lab

Sl.No	Questions & Options
CO1	This course help me to identify and apply various Linux commands?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	I was able to develop shell scripts and GUI for specific needs?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	I was able to use tools like GIT for version control?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	I was able to Perform basic level application deployment, kernel configuration and installation, packet management and installation etc.?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	I was able to Formulate scripts for text processing and regular expression using Perl, Awk commands
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - CS232 - Free and Open Source Software Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2				3	3	3		3
CO2	2		3		3			3	3	3		3
CO3	3		3		3			3	3	3		3
CO4	3		2	2	3			3	3	3		3
CO5	3	3	2	3	2			3	3	3		3

CO->PSO MAPPING - CS232 - Free and Open Source Software Lab

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	2	3	3
CO3	3	2	3
CO4	3		3
CO5	2	3	3

COURSE->PO MAPPING - CS232 - Free and Open Source Software Lab

CS232/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3			3	3	3		3

COURSE->PSO MAPPING - CS232 - Free and Open Source Software Lab

CS232/PSO	PSO1	PSO2	PSO3
	3	3	3

CS234

Course Code	Course Name	L-T-P:C	Year of Introduction
CS234	Digital Systems Lab	0-0-3:1	2016

No.	Course Outcome - CS234 - Digital Systems Lab	Target
CO1	Demonstrate the working of standard digital IC s and their basic building blocks	60%
CO2	Design and implement adder and subtractor circuits	62%
CO3	Evaluate the use of multiplexers and demultiplexers	62%
CO4	Formulate various flipflops using logic gates	62%
CO5	Design and implement shift registers	62%
CO6	Design and implement asynchronous and synchronous counters	62%

COURSE END SURVEY - CS234 - Digital Systems Lab

Sl.No	Questions & Options
CO1	Are you able to demonstrate the working of standard digital ICs and their basic building blocks
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO2	Are you able to design adder and subtractor circuits and to implement the same?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO3	Are you able to evaluate the use of multiplexers and demultiplexers?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO4	Are you able to design and implement various flipflops using logic gates?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO5	Are you able to design and implement shift registers?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*

CO6	Are you able to design and implement asynchronous and synchronous counters and differentiate between the same?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*

CO->PO MAPPING - CS234 - Digital Systems Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1						3	3	3		
CO2	3	2	2	1				3	3	3		1
CO3	3	2	2	1	1			3	3	3		1
CO4	3	2	2	1	1			3	3	3		1
CO5	3	3	2	2	1			3	3	3		1
CO6	3	3	3	1	1			3	3	3		1

CO->PSO MAPPING - CS234 - Digital Systems Lab

CO/PSO	PSO1	PSO2	PSO3
CO1	3		
CO2	3	1	
CO3	3	1	
CO4	3	1	
CO5	3	1	
CO6	3	1	

COURSE->PO MAPPING - CS234 - Digital Systems Lab

CS234/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	2	1			3	3	3		1

COURSE->PSO MAPPING - CS234 - Digital Systems Lab

CS234/PSO	PSO1	PSO2	PSO3
	3	1	

HS210

Course Code	Course Name	L-T-P:C	Year of Introduction
HS210	Life Skills/Business Economics	2-0-2:3	2016

No.	Course Outcome - HS210 - Life Skills/Business Economics	Target

CO1	Communicate with clarity and focus	60%
CO2	Create effective job applications and reports	61%
CO3	Demonstrate interview and group discussion skills effectively	61%
CO4	Use critical thinking and problem solving skills	61%
CO5	Demonstrate professional ethics and human values	61%
CO6	Identify the value of team dynamics and develops effective leadership qualities	61%

COURSE END SURVEY - HS210 - Life Skills/Business Economics

Sl.No	Questions & Options
CO1	To what extend you can communicate with clarity and focus?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO2	To what extend you can create job applications and reports?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO3	To what extend you can demonstrate interview and group discussion skills?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO4	To what extend you can use critical thinking and problem solving skills?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO5	To what extend you can demonstrate professional ethics and human values?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO6	To what extend you have identified the value of team dynamics and developed effective leadership qualities?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*

CO->PO MAPPING - HS210 - Life Skills/Business Economics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1										3		2
CO2										3		2
CO3									2	3		2
CO4				3								2
CO5			2			3	3	3				2
CO6									3		3	2

CO->PSO MAPPING - HS210 - Life Skills/Business Economics

CO/PSO	PSO1	PSO2	PSO3

CO1		2	
CO2			
CO3			1
CO4	2	2	
CO5			1
CO6			2

COURSE->PO MAPPING - HS210 - Life Skills/Business Economics

HS210/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
			2	3		3	3	3	3	3	3	2

COURSE->PSO MAPPING - HS210 - Life Skills/Business Economics

HS210/PSO	PSO1	PSO2	PSO3
	2	2	2

CST202

Course Code	Course Name	L-T-P:C	Year of Introduction
CST202	COMPUTER ORGANISATION AND ARCHITECTURE	3-1-0:4	2019

No.	Course Outcome - CST202 - COMPUTER ORGANISATION AND ARCHITECTURE	Target
CO1	Recognize and express the relevance of basic components, I/O organization and pipelining schemes in a digital computer	60%
CO2	Explain the types of memory systems and mapping functions used in memory systems	60%
CO3	Demonstrate the control signals required for the execution of a given instruction	60%
CO4	Illustrate the design of Arithmetic Logic Unit and explain the usage of registers in it	60%
CO5	Explain the implementation aspects of arithmetic algorithms in a digital computer	60%
CO6	Develop the control logic for a given arithmetic problem	60%

COURSE END SURVEY - CST202 - COMPUTER ORGANISATION AND ARCHITECTURE

Sl.No	Questions & Options
CO1	How far the student was able to Recognize and express the relevance of basic components, I/O organization and pipelining schemes in a digital computer
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	How far the student was able to Explain the types of memory systems and mapping functions used in memory systems

	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	How far the student was able to Demonstrate the control signals required for the execution of a given instruction
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	How far the student was able to Illustrate the design of Arithmetic Logic Unit and explain the usage of registers in it
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	How far the student was able to Explain the implementation aspects of arithmetic algorithms in a digital computer
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO6	how far the student was able to Develop the control logic for a given arithmetic problem
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - CST202 - COMPUTER ORGANISATION AND ARCHITECTURE

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2								2
CO2	3	3	2	2						2		2
CO3	3	3	2	2						2		2
CO4	3	3	2	2						2		2
CO5	3	3	2							2		3
CO6	3	3	2	3								2

CO->PSO MAPPING - CST202 - COMPUTER ORGANISATION AND ARCHITECTURE

CO/PSO	PSO1	PSO2	PSO3
CO1	3	2	
CO2	3	2	
CO3	3	2	
CO4	3	3	
CO5	3	2	
CO6	3	3	

COURSE->PO MAPPING - CST202 - COMPUTER ORGANISATION AND ARCHITECTURE

CST202/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	2	3						2		3

COURSE->PSO MAPPING - CST202 - COMPUTER ORGANISATION AND ARCHITECTURE

CST202/PSO	PSO1	PSO2	PSO3
	3	3	

MAT 206

Course Code	Course Name	L-T-P:C	Year of Introduction
MAT 206	Graph Theory	3-1-0:4	2019

No.	Course Outcome - MAT 206 - Graph Theory	Target
CO1	Explain vertices and their properties, types of paths, classification of graphs and trees & their properties.	60%
CO2	Demonstrate the fundamental theorems on Eulerian and Hamiltonian graphs.	60%
CO3	Illustrate the working of Prim's and Kruskal's algorithms for finding minimum cost spanning tree and Dijkstra's and Floyd-Warshall algorithms for finding shortest paths.	60%
CO4	Explain planar graphs, their properties and an application for planar graphs.	60%
CO5	Illustrate how one can represent a graph in a computer. Explain the Vertex Color problem in graphs and illustrate an example application for vertex coloring.	60%

COURSE END SURVEY - MAT 206 - Graph Theory

Sl.No	Questions & Options
CO1	Are you able to explain vertices and their properties, types of paths, classification of graphs and trees & their properties.
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO2	Can you demonstrate the fundamental theorems on Eulerian and Hamiltonian graphs.
	Answer Choice- *Very frequently/Frequently/Rarely Very rarely/Never*
CO3	Are you able to illustrate the working of Prim's and Kruskal's algorithms for finding minimum cost spanning tree and Dijkstra's and Floyd-Warshall algorithms for finding shortest paths.
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO4	Are you able to explain planar graphs, their properties and an application for planar graphs.
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO5	Are you able to explain the Vertex Color problem in graphs and illustrate an example application for vertex coloring.
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*

CO->PO MAPPING - MAT 206 - Graph Theory

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3							2		3

CO2	3	3	3	2						2		3
CO3	3	3	3	3						3		3
CO4	3	3	3	3						3		3
CO5	3	3	3	3						3		3

CO->PSO MAPPING - MAT 206 - Graph Theory

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	2	2	2
CO3	2	2	2
CO4	2	2	2
CO5	3	3	3

COURSE->PO MAPPING - MAT 206 - Graph Theory

MAT 206/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3						3		3

COURSE->PSO MAPPING - MAT 206 - Graph Theory

MAT 206/PSO	PSO1	PSO2	PSO3
	3	3	3

CST204

Course Code	Course Name	L-T-P:C	Year of Introduction
CST204	Database Management Systems	3-1-0:4	2019

No.	Course Outcome - CST204 - Database Management Systems	Target
CO1	Summarize and exemplify fundamental nature and characteristics of database systems.	65%
CO2	Model real word scenarios given as informal descriptions, using Entity Relationship diagrams.	65%
CO3	Model and design solutions for efficiently representing and querying data using relational model and Demonstrate the features of indexing and hashing in database applications	65%
CO4	Summarise and exemplify different anomalies in designing a database, the idea of normalization and functional dependency	65%
CO5	Discuss and compare the aspects of Concurrency Control and Recovery in Database systems and Explain various types of NoSQL databases	65%

COURSE END SURVEY - CST204 - Database Management Systems

Sl.No	Questions & Options
CO1	I am able to summarize and exemplify fundamental nature and characteristics of database systems.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	I can model real word scenarios given as informal descriptions, using Entity Relationship diagrams.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	I am able to Model and design solutions for efficiently representing and querying data using relational model and Demonstrate the features of indexing and hashing in database applications.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	I am able to Model and design solutions for efficiently representing and querying data using relational model and demonstrate the features of indexing and hashing in database applications.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	I can Discuss and compare the aspects of Concurrency Control and Recovery in Database systems and Explain various types of NoSQL databases.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - CST204 - Database Management Systems

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2	2							
CO2	3	3	3									
CO3	3	3	2									
CO4	3	2	3									
CO5	3	2	3									

CO->PSO MAPPING - CST204 - Database Management Systems

CO/PSO	PSO1	PSO2	PSO3
CO1	3	2	2
CO2	3	2	3
CO3	3	3	2
CO4	2	2	3
CO5	2	3	2

COURSE->PO MAPPING - CST204 - Database Management Systems

CST204/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	2	2							

COURSE->PSO MAPPING - CST204 - Database Management Systems

CST204/PSO	PSO1	PSO2	PSO3
	3	3	3

CST206

Course Code	Course Name	L-T-P:C	Year of Introduction
CST206	Operating Systems	3-1-0:4	2019

No.	Course Outcome - CST206 - Operating Systems	Target
CO1	Explain the relevance, structure and functions of Operating Systems in computing devices.	60%
CO2	Illustrate the concepts of process management and process scheduling mechanisms employed in Operating Systems.	60%
CO3	Explain process synchronization mechanisms using Mutex Locks, Semaphores and Monitors and illustrate methods for detection, prevention, avoidance and recovery for managing deadlocks in Operating Systems.	60%
CO4	Interpret the memory management algorithms in Operating Systems.	60%
CO5	Analyse the security aspects and algorithms for file and storage management in Operating Systems.	60%

COURSE END SURVEY - CST206 - Operating Systems

Sl.No	Questions & Options
CO1	Are you able to explain the relevance, structure and functions of Operating Systems in computing devices?
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO2	How far are you able to illustrate the concepts of process management and process scheduling mechanisms employed in Operating Systems?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	How far are you able to explain process synchronization mechanisms using Mutex Locks, Semaphores and Monitors and illustrate methods for detection, prevention, avoidance and recovery for managing deadlocks in Operating Systems?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	Are you able to interpret the memory management algorithms in Operating Systems?
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO5	How far are you able to analyse the security aspects and algorithms for file and storage management in Operating Systems?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - CST206 - Operating Systems

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	2								3
CO2	3	3	2	2								3
CO3	3	3	2	2	2							3
CO4	3	3	2	2								3
CO5	3	3	3	3	2			2				3

CO->PSO MAPPING - CST206 - Operating Systems

CO/PSO	PSO1	PSO2	PSO3
CO1	3	2	1
CO2	3	3	2
CO3	3	2	2
CO4	3	3	2
CO5	3	3	3

COURSE->PO MAPPING - CST206 - Operating Systems

CST206/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	2			2				3

COURSE->PSO MAPPING - CST206 - Operating Systems

CST206/PSO	PSO1	PSO2	PSO3
	3	3	3

HUT200

Course Code	Course Name	L-T-P:C	Year of Introduction
HUT200	PROFESSIONAL ETHICS	2-0-0:2	2019

No.	Course Outcome - HUT200 - PROFESSIONAL ETHICS	Target
CO1	Understand and recall the core values that shape the ethical behavior of a professional (Knowledge and Comprehension).	0%
CO2	Adopt a good character and follow an ethical life.(Synthesize)	0%
CO3	Explain and point out the role and responsibility in technological development by keeping personal ethics and legal ethic(ANALYSING)	0%
CO4	Solve moral and ethical problems through exploration and assessment by established experiments(APPLYING)	0%

CO5	Apply and appraise the knowledge of human values and social values to contemporary ethical values and global issues.(EVALUATING)	0%

COURSE END SURVEY - HUT200 - PROFESSIONAL ETHICS

Sl.No	Questions & Options
CO1	I am able to understand and recall core values required in professional life.
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO2	I am able to adopt a good character and follow an ethical life.
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO3	I am able to understand the roles and responsibilities of a professional.
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO4	I am able to analyze and solve moral and ethical problems.
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO5	I am able to judge a case or global issue.
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*

CO->PO MAPPING - HUT200 - PROFESSIONAL ETHICS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	1	2			3	3	3	3	2	2	2
CO2			1	2		1	2	3	1	2	1	3
CO3	2	2	2	1	2	2	1	3	1		1	2
CO4		1	1	3	1	1	1	3	1		1	1
CO5				1	1		1	2	1		1	1

CO->PSO MAPPING - HUT200 - PROFESSIONAL ETHICS

CO/PSO	PSO1	PSO2	PSO3
CO1	1		2
CO2	2	1	2
CO3	1	1	3
CO4	1	1	2
CO5		1	2

COURSE->PO MAPPING - HUT200 - PROFESSIONAL ETHICS

HUT200/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	2	2	3	2	3	3	3	3	2	2	3

COURSE->PSO MAPPING - HUT200 - PROFESSIONAL ETHICS

HUT200/PSO	PSO1	PSO2	PSO3
	2	1	3

MCN202

Course Code	Course Name	L-T-P:C	Year of Introduction
MCN202	CONSTITUTION OF INDIA	2-0-0:0	2019

No.	Course Outcome - MCN202 - CONSTITUTION OF INDIA	Target
CO1	Awareness of Constitution of India	60%
CO2	Knowing duties and rights of Citizens	60%
CO3	Understanding the working of union executive, parliament..	60%
CO4	Understanding the working of judiciary, legislature, state executive	60%
CO5	Utilize special provision and statutory institutions	60%
CO6	Patriotism and being responsible citizens.	60%

COURSE END SURVEY - MCN202 - CONSTITUTION OF INDIA

Sl.No	Questions & Options
CO1	Did you have the awareness of constitution of India
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	Are you able to know about the duties and rights of Citizens
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO3	Did you able to understand the working of union executive, parliament..
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO4	Do you understand the working of judiciary, legislature, state executive
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	Are you aware about the special provision and statutory institutions
	Answer Choice- *Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied*
CO6	Did you get clear idea about the responsiblities of a citizens and importance patriotism
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - MCN202 - CONSTITUTION OF INDIA

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO1							2	2	2	2		
CO2							3	3	3	3		
CO3							3	2	3	3		
CO4							3	2	3	3		
CO5							3	2	3	3		
CO6							3	3	3	2		

CO->PSO MAPPING - MCN202 - CONSTITUTION OF INDIA

CO/PSO	PSO1	PSO2	PSO3
CO1	2	2	2
CO2	2	3	2
CO3	3	3	2
CO4	3	3	3
CO5	3	3	3
CO6	2	3	3

COURSE->PO MAPPING - MCN202 - CONSTITUTION OF INDIA

MCN202/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
							3	3	3	3		

COURSE->PSO MAPPING - MCN202 - CONSTITUTION OF INDIA

MCN202/PSO	PSO1	PSO2	PSO3
	3	3	3

CSL202

Course Code	Course Name	L-T-P:C	Year of Introduction
CSL202	DIGITAL LAB	0-0-3:2	2019

No.	Course Outcome - CSL202 - DIGITAL LAB	Target
CO1	Design and implement combinational logic circuits using Logic Gates (Cognitive Knowledge Level: Apply)	60%
CO2	Design and implement sequential logic circuits using Integrated Circuits (Cognitive Knowledge Level: Apply)	60%

CO3	Simulate functioning of digital circuits using programs written in a Hardware Description Language (Cognitive Knowledge Level: Apply)	60%
CO4	Function effectively as an individual and in a team to accomplish a given task of designing and implementing digital circuits (Cognitive Knowledge Level: Apply)	60%

COURSE END SURVEY - CSL202 - DIGITAL LAB

Sl.No	Questions & Options
CO1	I am able to Design and implement combinational logic circuits using Logic Gates
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO2	I am able to Design and implement sequential logic circuits using Integrated Circuits
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO3	I am able to Simulate functioning of digital circuits using programs written in a Hardware Description Language
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO4	I am able to Function effectively as an individual and in a team to accomplish a given task of designing and implementing digital circuits
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*

CO->PO MAPPING - CSL202 - DIGITAL LAB

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2										
CO2	3	2										
CO3	3											
CO4									3			

CO->PSO MAPPING - CSL202 - DIGITAL LAB

CO/PSO	PSO1	PSO2	PSO3
CO1	3	1	
CO2	3	1	
CO3	3	3	
CO4	1		1

COURSE->PO MAPPING - CSL202 - DIGITAL LAB

CSL202/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	2							3			

COURSE->PSO MAPPING - CSL202 - DIGITAL LAB

CSL202/PSO	PSO1	PSO2	PSO3
	3	3	1

CSL204

Course Code	Course Name	L-T-P:C	Year of Introduction
CSL204	OPERATING SYSTEMS LAB	0-0-3:2	2019

No.	Course Outcome - CSL204 - OPERATING SYSTEMS LAB	Target
CO1	Illustrate the use of systems calls in Operating Systems.	60%
CO2	Implement Process Creation and Inter Process Communication in Operating Systems.	60%
CO3	Implement First Come First Served, Shortest Job First, Round Robin and Priority based CPU Scheduling Algorithms.	60%
CO4	Illustrate the performance of Memory allocation methods and Page Replacement Algorithms.	60%
CO5	Implement modules for Deadlock Detection and Deadlock Avoidance in Operating Systems.	60%
CO6	Implement modules for Storage Management and Disk Scheduling in Operating Systems.	60%

COURSE END SURVEY - CSL204 - OPERATING SYSTEMS LAB

Sl.No	Questions & Options
CO1	How far are you able to illustrate the use of systems calls in Operating Systems?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	How far are you able to implement Process Creation and Inter Process Communication in Operating Systems?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	How far are you able to implement First Come First Served, Shortest Job First, Round Robin and Priority based CPU Scheduling Algorithms?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	How far are you able to illustrate the performance of First In First Out, Least Recently Used and Least Frequently Used Page Replacement Algorithms?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	How far are you able to implement modules for Deadlock Detection and Deadlock Avoidance in Operating Systems?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO6	How far are you able to implement modules for Storage Management and Disk Scheduling in Operating Systems?

	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - CSL204 - OPERATING SYSTEMS LAB

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2	3			2	3	3	2	3
CO2	3	3	3	2	3			2	3	3	2	3
CO3	3	3	3	2	3			2	3	3	2	3
CO4	3	3	3	2	3			2	3	3	2	3
CO5	3	3	3	2	3			2	3	3	2	3
CO6	3	3	3	2	3			2	3	3	2	3

CO->PSO MAPPING - CSL204 - OPERATING SYSTEMS LAB

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	2
CO2	3	3	2
CO3	3	3	2
CO4	3	3	2
CO5	3	3	2
CO6	3	3	2

COURSE->PO MAPPING - CSL204 - OPERATING SYSTEMS LAB

CSL204/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	2	3			2	3	3	2	3

COURSE->PSO MAPPING - CSL204 - OPERATING SYSTEMS LAB

CSL204/PSO	PSO1	PSO2	PSO3
	3	3	2

SEMESTER-5

CS301

Course Code	Course Name	L-T-P:C	Year of Introduction
CS301	Theory of Computation	3-1-0:4	2016

No.	Course Outcome - CS301 - Theory of Computation	Target
CO1	Classify formal languages into regular, context-free, context sensi tive and unrestricted languages.	66%

CO2	Design finite state automata, regular grammar, regular expression and Myhill- Nerode relation representations for regular languages	66%
CO3	Design push-down automata and context-free grammar representations for context-free languages	61%
CO4	Design Turing Machines for accepting recursively enumerable languages	61%
CO5	Understand the notions of decidability and un-decidability of problems, Halting problem, design.	66%

COURSE END SURVEY - CS301 - Theory of Computation

Sl.No	Questions & Options
CO1	How far you are able to classify formal languages into regular, context-free, context sensi tive and unrestricted languages.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	How far you are able to design finite state automata, regular grammar, regular expression and Myhill-Nerode relation representations for regular languages
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO3	How far you are able to design push-down automata and context-free grammar representations for context-free languages
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	How far you are able to design Turing Machines for accepting recursively enumerable languages
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	How far you are able to understand the notions of decidability and un-decidability of problems, Halting problem, design.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - CS301 - Theory of Computation

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3											3
CO2	3	3	3	2								3
CO3	3	3	3	2								3
CO4	3	3	3	3	2							3
CO5	3	3	3	2								3

CO->PSO MAPPING - CS301 - Theory of Computation

CO/PSO	PSO1	PSO2	PSO3
CO1	3		
CO2	3	2	

CO3	3	3	
CO4	3	3	
CO5	3	3	

COURSE->PO MAPPING - CS301 - Theory of Computation

CS301/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	2							3

COURSE->PSO MAPPING - CS301 - Theory of Computation

CS301/PSO	PSO1	PSO2	PSO3
	3	3	

CS303

Course Code	Course Name	L-T-P:C	Year of Introduction
CS303	System Software	2-1-0:3	2016

No.	Course Outcome - CS303 - System Software	Target
CO1	Classify and identify different software into different categories.	62%
CO2	Design, implement and analyze two pass assemblers.	62%
CO3	Design, implement and analyze loaders and linkers	62%
CO4	Design, implement and analyze macro processors	62%
CO5	Analyze and assess the features of modern editing/debugging tools.	62%
CO6	Design, implement and analyze one pass and multi pass assemblers.	62%

COURSE END SURVEY - CS303 - System Software

Sl.No	Questions & Options
CO1	To what extent you are able to classify and identify different software into different categories.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO2	To what extent you are able to design, implement and analyze two pass assemblers.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO3	To what extent you are able to design, implement and analyze loaders and linkers
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	To what extent you are able to design, implement and analyze macro processors

	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO5	To what extent you are able to analyze and assess the features of modern editing/debugging tools.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO6	To what extent you are able to design, analyze and implement one pass and multi pass assemblers
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - CS303 - System Software

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3									2
CO2	3	3	3	2	2							2
CO3	3	3	3	3								2
CO4	3	3	3	3								2
CO5	3	2										2
CO6	3	3	3	2	2							2

CO->PSO MAPPING - CS303 - System Software

CO/PSO	PSO1	PSO2	PSO3
CO1	3		
CO2	3	3	
CO3	3	3	
CO4	3	3	
CO5	3		
CO6	3	3	

COURSE->PO MAPPING - CS303 - System Software

CS303/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	2							2

COURSE->PSO MAPPING - CS303 - System Software

CS303/PSO	PSO1	PSO2	PSO3
	3	3	

CS305

Course Code	Course Name	L-T-P:C	Year of Introduction

CS305	Microprocessors and Microcontrollers	2-1-0:3	2016

No.	Course Outcome - CS305 - Microprocessors and Microcontrollers	Target
CO1	Describe the basic architecture, pin and timing diagram of an 8086 microprocessor	66%
CO2	Develop 8086 assembly language programming with suitable instruction sets and addressing modes	62%
CO3	Express and compare different interrupts and basic interfacing of 8086	66%
CO4	Explain interfacing of microprocessors with memory and basic I/O interfaces	62%
CO5	Describe the basic architecture, memory and register organization of 8051 microcontrollers	66%
CO6	Design and develop assembly language programs using 8051 microcontroller with suitable instruction set and addressing modes	66%

COURSE END SURVEY - CS305 - Microprocessors and Microcontrollers

Sl.No	Questions & Options
CO1	How far you are able to Describe the basic architecture, pin and timing diagram of an 8086 microprocessor
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	how far you are able to Develop 8086 assembly language programming with suitable instruction sets and addressing modes
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	How far you are able to Express and compare different interrupts and basic interfacing of 8086
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	How far you are able to Explain interfacing of microprocessors with memory and basic I/O interfaces
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	how far you are able to Describe the basic architecture, memory and register organization of 8051 microcontrollers
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO6	How far you are able to Design and develop assembly language programs using 8051 microcontroller with suitable instruction set and addressing modes
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - CS305 - Microprocessors and Microcontrollers

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3				2							2
CO2	3	3	3	2	2	2						2
CO3	3	3	3	2	2	2						2

CO4	3	2	2	2								2
CO5	3											2
CO6	3	3	3	2	2	2						2

CO->PSO MAPPING - CS305 - Microprocessors and Microcontrollers

CO/PSO	PSO1	PSO2	PSO3
CO1	2		
CO2	3	2	
CO3	1	2	
CO4	2		3
CO5	2		
CO6	3	2	3

COURSE->PO MAPPING - CS305 - Microprocessors and Microcontrollers

CS305/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	2	2	2						2

COURSE->PSO MAPPING - CS305 - Microprocessors and Microcontrollers

CS305/PSO	PSO1	PSO2	PSO3
	3	2	3

CS361

Course Code	Course Name	L-T-P:C	Year of Introduction
CS361	Soft Computing	3-0-0:3	2016

No.	Course Outcome - CS361 - Soft Computing	Target
CO1	Explain the fundamentals of Artificial Neural Networks and illustrate the basic models of ANN	61%
CO2	Classify the various feed-forward Neural Network architectures	61%
CO3	Distinguish between crisp and fuzzy sets and Categorize the various operations of fuzzy sets and fuzzy relations	61%
CO4	Understand about the need for fuzzification and defuzzification methods for real world problems	61%
CO5	Understand about fuzzy rules and illustrate about the methods of fuzzy interference systems	61%
CO6	Outline Genetic Algorithm and various operators of Genetic Algoithm and its various application areas	61%

COURSE END SURVEY - CS361 - Soft Computing

Sl.No	Questions & Options
CO1	To what extent you are able to understand the fundamentals of Artificial Neural Networks and illustrate the basic models of ANN
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	To what extent you are able to classify the various feed-forward Neural Network architectures?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	To what extent you are able to Distinguish between crisp and fuzzy sets and categorize the various operations of fuzzy sets and fuzzy relations?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	To what extent you are able to understand about the need for fuzzification and defuzzification methods for real world problems
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	To what extent you are able to understand about fuzzy rules and illustrate about the methods of fuzzy interference systems
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO6	To what extent you are able to Outline Genetic Algorithm and various operators of Genetic Algoithm and its various application areas
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - CS361 - Soft Computing

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	2	1						2	3
CO2	3	2	1	2	2				2			3
CO3	3	3		2	3				2		2	3
CO4	2	2	2	2	2				2		2	3
CO5	3	2	1	3	2	2			2			3
CO6	2	3	2	2	2	2			2		2	3

CO->PSO MAPPING - CS361 - Soft Computing

CO/PSO	PSO1	PSO2	PSO3
CO1	3	2	
CO2	3	2	
CO3	3	2	2
CO4	3	3	3

CO5	3	3	3
CO6	3	3	3

COURSE->PO MAPPING - CS361 - Soft Computing

CS361/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	2	3	3	2			2		2	3

COURSE->PSO MAPPING - CS361 - Soft Computing

CS361/PSO	PSO1	PSO2	PSO3
	3	3	3

CS361

Course Code	Course Name	L-T-P:C	Year of Introduction
CS361	Soft Computing	3-0-0:3	2016

COURSE END SURVEY - CS361 - Soft Computing
CO->PO MAPPING - CS361 - Soft Computing

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CS361 - Soft Computing

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CS361 - Soft Computing

CS361/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CS361 - Soft Computing

CS361/PSO	PSO1	PSO2	PSO3

CS341

Course Code	Course Name	L-T-P:C	Year of Introduction
CS341	Design Project	0-1-2:2	2016

No.	Course Outcome - CS341 - Design Project	Target
CO1	To understand the engineering aspects of design with reference to simple products.	70%
CO2	To foster innovation in design of products, processes or systems	75%
CO3	To understand different CASE tools required for various levels of design	70%

CO4	To develop design that add value to products and solve technical problems	70%
CO5	Demonstrate skills to manage creative teams and project processes effectively and efficiently	70%
CO6	Prepare high quality engineering documents and present a clear and coherent presentation of these to a range of technical and nontechnical audiences	70%

COURSE END SURVEY - CS341 - Design Project

Sl.No	Questions & Options
CO1	To what extend are you able to understand the engineering aspects of design with reference to simple products.
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO2	To what extend are you able to foster innovation in design of products, processes or systems
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO3	To what extend are you able to understand different CASE tools required for various levels of design
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO4	To what extend are you able to develop design that add value to products and solve technical problems
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO5	To what extend are you able to manage creative teams and project processes effectively and efficiently
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO6	To what extend are you able to prepare high quality engineering documents and present a clear and coherent presentation of these to a range of technical and nontechnical audiences
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*

CO->PO MAPPING - CS341 - Design Project

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3		2	2	3	3	3	3	3	3
CO2	3	3	3	2	2	2	3	3	3	3	3	3
CO3	3	3	2	2	3			3	3	3	3	3
CO4	3	2	3	3	2	2	3	3	3	3	3	3
CO5								3	3	3	3	3
CO6	2					2		3	3	3	3	3

CO->PSO MAPPING - CS341 - Design Project

CO/PSO	PSO1	PSO2	PSO3
CO1	3		3
CO2	3	3	3

CO3	3		3
CO4	3	3	3
CO5		3	3
CO6			3

COURSE->PO MAPPING - CS341 - Design Project

CS341/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	2	3	3	3	3	3	3

COURSE->PSO MAPPING - CS341 - Design Project

CS341/PSO	PSO1	PSO2	PSO3
	3	3	3

CS331

Course Code	Course Name	L-T-P:C	Year of Introduction
CS331	System Software Lab	0-0-3:1	2016

No.	Course Outcome - CS331 - System Software Lab	Target
CO1	Compare and analyze CPU Scheduling Algorithms like FCFS, Round Robin, SJF, and Priority.	61%
CO2	Apply synchronization techniques using semaphores	61%
CO3	Implement bankers algorithm for deadlock avoidance	61%
CO4	Analyze and implement memory management schemes,page replacement schemes ,file allocation and organization techniques	61%
CO5	Appreciate and implement the importance of system software such as loaders, assemblers and macro processor	60%
CO6	Implement various disk scheduling algorithms	61%

COURSE END SURVEY - CS331 - System Software Lab

Sl.No	Questions & Options
CO1	To what extend you were able to compare and analyze CPU Scheduling Algorithms like FCFS, Round Robin, SJF, and Priority.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO2	To what extend you were able to apply synchronization techniques using semaphores
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO3	To what extend you were able to understand deadlock avoidance using bankers algorithm

	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	To what extend you were able to analyze and implement memory management schemes,page replacement schemes ,file allocation and organization techniques
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO5	To what extend you were able to appreciate and implement the importance of system software such as loaders, assemblers and macro processor
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO6	To what extend you were able to implement various disk scheduling algorithms
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - CS331 - System Software Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	3	3			3	3	3		2
CO2	2	3	2	3	3			3	3	3		2
CO3	3	3	2	3	3			3	3	3		2
CO4	3	3	2	3	3			3	3	3		2
CO5	3	3	2	3	3			3	3	3		2
CO6	3	3	2	3	3			3	3	3		2

CO->PSO MAPPING - CS331 - System Software Lab

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	2
CO2	3	3	2
CO3	3	3	2
CO4	3	3	2
CO5	3	3	2
CO6	3	3	2

COURSE->PO MAPPING - CS331 - System Software Lab

CS331/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	2	3	3			3	3	3		2

COURSE->PSO MAPPING - CS331 - System Software Lab

CS331/PSO	PSO1	PSO2	PSO3
	3	3	2

CS333

Course Code	Course Name	L-T-P:C	Year of Introduction
CS333	Application Software Development Lab	0-0-3:1	2016

No.	Course Outcome - CS333 - Application Software Development Lab	Target
CO1	Familiarize and implement various SQL commands like DDL,DML,DCL and TCL etc.	70%
CO2	Design and implement advanced database manipulation queries such as nested queries, join queries etc.	63%
CO3	Apply PL-SQL concepts such as various control structures, creation of procedures and functions.	60%
CO4	Analyze stored programming concepts using cursors, exceptions and triggers.	63%
CO5	Develop medium sized application using PHP and SQL.	65%

COURSE END SURVEY - CS333 - Application Software Development Lab

Sl.No	Questions & Options
CO1	To what extend you are able to familiarize and implement various SQL commands like DDL,DML,DCL,TCL etc.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	To what extend you are able to design and implement advanced database manipulation queries such as nested queries,join queries etc.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	To what extend you are able to apply PL-SQL concepts such as various control structures, creation of procedures and functions.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	To what extend you are able to analyze stored programming concepts using cursors, exceptions and triggers.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	To what extend you are able to develop medium sized application using PHP and SQL.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - CS333 - Application Software Development Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3		2			3	3	3		3
CO2	3	3	3	2	3			3	3	3		3
CO3	3	3	3	2	3			3	3	3		3
CO4	3	3	3	3	3			3	3	3		3

CO5	3	3	3	3	3	3	3	3	3	3	3	3

CO->PSO MAPPING - CS333 - Application Software Development Lab

CO/PSO	PSO1	PSO2	PSO3
CO1	3		3
CO2	3		3
CO3	3	3	3
CO4	2	3	3
CO5	2	3	3

COURSE->PO MAPPING - CS333 - Application Software Development Lab

CS333/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	3	3	3	3	3	3	3

COURSE->PSO MAPPING - CS333 - Application Software Development Lab

CS333/PSO	PSO1	PSO2	PSO3
	3	3	3

CS307

Course Code	Course Name	L-T-P:C	Year of Introduction
CS307	Data Communication	3-0-0:3	2016

No.	Course Outcome - CS307 - Data Communication	Target
CO1	Analyse fundamental communication models and transmission impairments in communication system	65%
CO2	Compare and select transmission media based on channel capacity	66%
CO3	Analyse and compare different signal encoding techniques for a given scenario	65%
CO4	Illustrate and use various multiplexing techniques for real world applications	65%
CO5	Identify suitable error detection and error correction algorithms to achieve effective data communication	66%
CO6	Discuss different switching techniques and spread spectrum techniques	65%

COURSE END SURVEY - CS307 - Data Communication

Sl.No	Questions & Options
CO1	To what extend you are able to identify and list various issues present in the design of a data communication system

	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO2	To what extend you are able to compare and select transmission media based on channel capacity
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO3	To what extend you are able to compare different signal encoding techniques for a given scenario
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	To what extend you are able to select and use appropriate signal encoding techniques and multiplexing techniques
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO5	To what extend you are able to identify suitable error detection and error correction algorithms to achieve data communication
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO6	To what extend you are aware about different switching techniques
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - CS307 - Data Communication

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2		3						3
CO2	3	2	2	2		3						
CO3	3	3	3	3		2						2
CO4	3	3	3	3		2						2
CO5	3	3	3	3								3
CO6	2	3	3	2								

CO->PSO MAPPING - CS307 - Data Communication

CO/PSO	PSO1	PSO2	PSO3
CO1	3		
CO2	3		
CO3	3	2	
CO4	3	2	
CO5	3	3	
CO6	3		

COURSE->PO MAPPING - CS307 - Data Communication

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CS307/PO	3	3	3	3		3						3

COURSE->PSO MAPPING - CS307 - Data Communication

CS307/PSO	PSO1	PSO2	PSO3
	3	3	

CS309

Course Code	Course Name	L-T-P:C	Year of Introduction
CS309	Graph Theory and Combinatorics	2-0-2:3	2016

No.	Course Outcome - CS309 - Graph Theory and Combinatorics	Target
CO1	Demonstrate the knowledge of fundamental concepts in graph theory,including properties and characterization of graphs and trees	65%
CO2	Formulate graph theoretic models to solve real world problems	63%
CO3	Formulate and prove fundamental properties of trees	63%
CO4	Describe and apply some basic algorithms for graph vertex colouring,connectivity and planar & non planar graphs	65%
CO5	Distinguish matrix representation of graphs and circuit matrix	65%
CO6	Develop efficient algorithms for graph related problems in different domains of engineering and science.	64%

COURSE END SURVEY - CS309 - Graph Theory and Combinatorics

Sl.No	Questions & Options
CO1	To what extend you are able to Demonstrate the knowledge of fundamental concepts in graph theory,including properties and characterization of graphs and trees
	Answer Choice- *Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied*
CO2	To what extend you are able to Formulate graph theoretic models to solve real world problems
	Answer Choice- *Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied*
CO3	To what extend you are able to Formulate and prove fundamental properties of trees
	Answer Choice- *Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied*
CO4	To what extend you are able to Describe and apply some basic algorithms for graph vertex colouring,connectivity and planar & non planar graphs
	Answer Choice- *Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied*
CO5	to what extend you are able to Distinguish matrix representation of graphs and circuit matrix
	Answer Choice- *Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied*

CO6	To what extend you are able to Develop efficient algorithms for graph related problems in different domains of engineering and science.
	Answer Choice- *Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied*

CO->PO MAPPING - CS309 - Graph Theory and Combinatorics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	1								3
CO2	3	3	3	3	2							3
CO3	3	2	3	3								3
CO4	3	3	3	3	2							3
CO5	3	2	1									3
CO6	3	3	3	3	3							3

CO->PSO MAPPING - CS309 - Graph Theory and Combinatorics

CO/PSO	PSO1	PSO2	PSO3
CO1	3		
CO2	3	3	3
CO3	3	3	
CO4	3	3	3
CO5			
CO6	3	3	3

COURSE->PO MAPPING - CS309 - Graph Theory and Combinatorics

CS309/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3							3

COURSE->PSO MAPPING - CS309 - Graph Theory and Combinatorics

CS309/PSO	PSO1	PSO2	PSO3
	3	3	3

CST301

Course Code	Course Name	L-T-P:C	Year of Introduction
CST301	FORMAL LANGUAGES AND AUTOMATA THEORY	3-1-0:4	2019

No.	Course Outcome - CST301 - FORMAL LANGUAGES AND AUTOMATA THEORY	Target

CO1	After the completion of the course the student will be able to Classify a given formal language into Regular, Context-Free, Context Sensitive, Recursive or Recursively Enumerable.	60%
CO2	After the completion of the course the student will be able to Explain a formal representation of a given regular language as a finite state automaton, regular grammar, regular expression and Myhill-Nerode relation.	60%
CO3	After the completion of the course the student will be able to Design a Pushdown Automaton and a Context-Free Grammar for a given context-free language.	60%
CO4	After the completion of the course the student will be able to Design Turing machines as language acceptors or transducers.	60%
CO5	After the completion of the course the student will be able to Explain the notion of decidability.	60%

COURSE END SURVEY - CST301 - FORMAL LANGUAGES AND AUTOMATA THEORY

Sl.No	Questions & Options
CO1	How strongly do you agree with the following statement: You able to Classify a given formal language into Regular, Context-Free, Context Sensitive, Recursive or Recursively Enumerable.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	How strongly do you agree with the following statement: you are able to Explain a formal representation of a given regular language as a finite state automaton, regular grammar, regular expression and Myhill-Nerode relation.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	How strongly do you agree with the following statement: you are able to Design a Pushdown Automaton and a Context-Free Grammar for a given context-free language.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	How strongly do you agree with the following statement: you are able to Design Turing machines as language acceptors or transducers.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	How strongly do you agree with the following statement: you are able to Explain the notion of decidability.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - CST301 - FORMAL LANGUAGES AND AUTOMATA THEORY

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3									3
CO2	3	3	3	2								3
CO3	3	3	3	2								3
CO4	3	3	3	2								3
CO5	3	3	3	3								3

CO->PSO MAPPING - CST301 - FORMAL LANGUAGES AND AUTOMATA THEORY

CO/PSO	PSO1	PSO2	PSO3
CO1	3	1	
CO2	3	1	
CO3	3	1	
CO4	3	1	
CO5	3	1	

COURSE->PO MAPPING - CST301 - FORMAL LANGUAGES AND AUTOMATA THEORY

CST301/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3								3

COURSE->PSO MAPPING - CST301 - FORMAL LANGUAGES AND AUTOMATA THEORY

CST301/PSO	PSO1	PSO2	PSO3
	3	1	

cst303

Course Code	Course Name	L-T-P:C	Year of Introduction
cst303	Computer Networks	3-1-0:4	2019

No.	Course Outcome - cst303 - Computer Networks	Target
CO1	Identify the features of computer networks, protocols, and network design models	61%
CO2	Describe the fundamental characteristics of the physical layer and identify the usage in network communication	61%
CO3	Explain the design issues of data link layer, link layer protocols, bridges and switches	61%
CO4	Illustrate wired LAN protocols (IEEE 802.3) and wireless LAN protocols (IEEE 802.11)	61%
CO5	Apply appropriate routing algorithms, congestion control techniques, and Quality of Service requirements for a network	60%
CO6	Illustrate the functions and protocols of the network layer, transport layer, and application layer in inter-networking	61%

COURSE END SURVEY - cst303 - Computer Networks

Sl.No	Questions & Options
CO1	CO2
CO3	CO4
CO5	CO6

CO->PO MAPPING - cst303 - Computer Networks

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2									3
CO2	3	3	3									3
CO3	3	3	3	2								3
CO4	3	3	3	2								3
CO5	3	3	3	3				2				3
CO6	3	3	3	3								3

CO->PSO MAPPING - cst303 - Computer Networks

CO/PSO	PSO1	PSO2	PSO3
CO1	3	2	2
CO2	3	2	1
CO3	3	2	2
CO4	3	2	2
CO5	3	2	2
CO6	3	2	3

COURSE->PO MAPPING - cst303 - Computer Networks

cst303/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3				2				3

COURSE->PSO MAPPING - cst303 - Computer Networks

cst303/PSO	PSO1	PSO2	PSO3
	3	2	3

CST305

Course Code	Course Name	L-T-P:C	Year of Introduction
CST305	System Software	3-1-0:4	2019

COURSE END SURVEY - CST305 - System Software
CO->PO MAPPING - CST305 - System Software

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CST305 - System Software

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CST305 - System Software

CST305/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CST305 - System Software

CST305/PSO	PSO1	PSO2	PSO3

CST307

Course Code	Course Name	L-T-P:C	Year of Introduction
CST307	Microprocessors and Microcontrollers	3-1-0:4	2019

COURSE END SURVEY - CST307 - Microprocessors and Microcontrollers
CO->PO MAPPING - CST307 - Microprocessors and Microcontrollers

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CST307 - Microprocessors and Microcontrollers

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CST307 - Microprocessors and Microcontrollers

CST307/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CST307 - Microprocessors and Microcontrollers

CST307/PSO	PSO1	PSO2	PSO3

CST309

Course Code	Course Name	L-T-P:C	Year of Introduction
CST309	MANAGEMENT OF SOFTWARE SYSTEMS	3-0-0:3	2019

No.	Course Outcome - CST309 - MANAGEMENT OF SOFTWARE SYSTEMS	Target
CO1	Identify various phases of software development and demonstrate Traditional and Agile Software Development approaches	61%
CO2	Analyze a problem, define and identify the computing requirements appropriate to its solution.	61%
CO3	Analyze the significance of design patterns and licensing terms in software development, prepare testing, maintenance and DevOps strategies for a project.	61%
CO4	Recognize the role of project management including planning, scheduling, risk management, etc	61%
CO5	Utilize SQA practices, Process Improvement techniques and Technology advancements in cloud based software models and containers & microservices.	61%

COURSE END SURVEY - CST309 - MANAGEMENT OF SOFTWARE SYSTEMS

Sl.No	Questions & Options
CO1	How far you are able to Identify various phases of software development and demonstrate Traditional and Agile Software Development approaches
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	How far you are able to analyze a problem, define and identify the computing requirements appropriate to its solution.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	How far you are able to analyze the significance of design patterns and licensing terms in software development, prepare testing, maintenance and DevOps strategies for a project.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	How far you are able to recognize the role of project management including planning, scheduling, risk management, etc
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	How far you are able to utilize SQA practices, Process Improvement techniques and Technology advancements in cloud based software models and containers & microservices.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - CST309 - MANAGEMENT OF SOFTWARE SYSTEMS

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												
CO5												

CO->PSO MAPPING - CST309 - MANAGEMENT OF SOFTWARE SYSTEMS

CO/PSO	PSO1	PSO2	PSO3
CO1			
CO2			
CO3			
CO4			
CO5			

COURSE->PO MAPPING - CST309 - MANAGEMENT OF SOFTWARE SYSTEMS

CST309/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CST309 - MANAGEMENT OF SOFTWARE SYSTEMS

CST309/PSO	PSO1	PSO2	PSO3

CSL331

Course Code	Course Name	L-T-P:C	Year of Introduction
CSL331	SYSTEM SOFTWARE AND MICROPROCESSORS LAB	0-0-4:2	2019

COURSE END SURVEY - CSL331 - SYSTEM SOFTWARE AND MICROPROCESSORS LAB
CO->PO MAPPING - CSL331 - SYSTEM SOFTWARE AND MICROPROCESSORS LAB

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CSL331 - SYSTEM SOFTWARE AND MICROPROCESSORS LAB

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CSL331 - SYSTEM SOFTWARE AND MICROPROCESSORS LAB

CSL331/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CSL331 - SYSTEM SOFTWARE AND MICROPROCESSORS LAB

CSL331/PSO	PSO1	PSO2	PSO3

CSL333

Course Code	Course Name	L-T-P:C	Year of Introduction
CSL333	DATABASE MANAGEMENT SYSTEMS LAB	0-0-4:2	2019

No.	Course Outcome - CSL333 - DATABASE MANAGEMENT SYSTEMS LAB	Target
CO1	Design database schema for a given real world problem-domain using standard design and modeling approaches.	61%
CO2	Construct queries using SQL for database creation, interaction, modification, and updation.	61%
CO3	Analyze stored programming concepts using cursors and triggers.	61%
CO4	Apply PL-SQL concepts such as various control structures, creation of procedures and functions.	61%
CO5	Perform CRUD operations in NoSQL Databases.	61%
CO6	Develop database applications using front-end tools and back-end DBMS.	61%

COURSE END SURVEY - CSL333 - DATABASE MANAGEMENT SYSTEMS LAB

Sl.No	Questions & Options

CO1	To what extend you are able to design database schema for a given real world problem-domain using standard design and modeling approaches.
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO2	To what extend you are able to construct queries for database creation, interaction, modification and updation.
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO3	To what extend you are able to design and implement using cursors and triggers.
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO4	To what extend you are able to Implement procedures, functions, and control structures using PL/SQL.
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO5	To what extend you are able to apply CRUD operations in NoSQL Databases
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO6	To what extend you are able to create database applications using front-end tools and back-end DBMS.
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*

CO->PO MAPPING - CSL333 - DATABASE MANAGEMENT SYSTEMS LAB

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	3		2			1		1		2
CO2	1	3	3		2			1		1		1
CO3	1	1	3	3	2			1		1		1
CO4	1	3	3	3	3			1		1		1
CO5	1	3	3		3			2		1		1
CO6	1	1	3	2	3	2		1	2	1	2	1

CO->PSO MAPPING - CSL333 - DATABASE MANAGEMENT SYSTEMS LAB

CO/PSO	PSO1	PSO2	PSO3
CO1	3	2	1
CO2	3	2	1
CO3	3	2	1
CO4	3	1	1
CO5	2	1	1
CO6	3	2	1

COURSE->PO MAPPING - CSL333 - DATABASE MANAGEMENT SYSTEMS LAB

CSL333/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	1	3	3	3	3	2		2	2	1	2	2

COURSE->PSO MAPPING - CSL333 - DATABASE MANAGEMENT SYSTEMS LAB

CSL333/PSO	PSO1	PSO2	PSO3
	3	2	1

MCN301

Course Code	Course Name	L-T-P:C	Year of Introduction
MCN301	Disaster Management	2-0-0:2	2019

No.	Course Outcome - MCN301 - Disaster Management	Target
CO1	To understand the various terminologies in use in disaster management parlance and organize each of these terms in relation to the disaster management cycle	55%
CO2	To understand different hazard types and vulnerability types and do vulnerability assessment	55%
CO3	To understand the components and describe the process of risk assessment, and apply appropriate methodologies to assess risk.	55%
CO4	To apply the core elements and phases of Disaster Risk Management and develop possible measures to reduce disaster risks across sectors and communities.	55%
CO5	To understand the factors that determine the nature of disaster response and discuss the various disaster response actions.	55%
CO6	To understand the various legislations and best practices for disaster management and risk reduction at the national and international levels.	55%

COURSE END SURVEY - MCN301 - Disaster Management

Sl.No	Questions & Options
CO1	Can you understand the various terminologies in use in disaster management parlance and organize each of these terms in relation to the disaster management cycle?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	Can you understand different hazard types and vulnerability types and do vulnerability assessment?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO3	Can you understand the components and describe the process of risk assessment, and apply appropriate methodologies to assess risk?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	Are you able to apply the core elements and phases of Disaster Risk Management and develop possible measures to reduce disaster risks across sectors and communities?

	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO5	Can you understand the factors that determine the nature of disaster response and discuss the various disaster response actions?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO6	

CO->PO MAPPING - MCN301 - Disaster Management

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												
CO5												
CO6												

CO->PSO MAPPING - MCN301 - Disaster Management

CO/PSO	PSO1	PSO2	PSO3
CO1			
CO2			
CO3			
CO4			
CO5			
CO6			

COURSE->PO MAPPING - MCN301 - Disaster Management

MCN301/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - MCN301 - Disaster Management

MCN301/PSO	PSO1	PSO2	PSO3

SEMESTER-6

CS010601

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010601	Design and Analysis of Algorithm	4-0-0:4	2010

COURSE END SURVEY - CS010601 - Design and Analysis of Algorithm
CO->PO MAPPING - CS010601 - Design and Analysis of Algorithm

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CS010601 - Design and Analysis of Algorithm

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CS010601 - Design and Analysis of Algorithm

CS010601/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CS010601 - Design and Analysis of Algorithm

CS010601/PSO	PSO1	PSO2	PSO3

CS010602

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010602	INTERNET COMPUTING	4-0-0:4	2010

COURSE END SURVEY - CS010602 - INTERNET COMPUTING
CO->PO MAPPING - CS010602 - INTERNET COMPUTING

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CS010602 - INTERNET COMPUTING

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CS010602 - INTERNET COMPUTING

CS010602/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CS010602 - INTERNET COMPUTING

CS010602/PSO	PSO1	PSO2	PSO3

CS010603

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010603	System Software	4-0-0:4	2010

COURSE END SURVEY - CS010603 - System Software
CO->PO MAPPING - CS010603 - System Software

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CS010603 - System Software

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CS010603 - System Software

CS010603/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CS010603 - System Software

CS010603/PSO	PSO1	PSO2	PSO3

CS010604

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010604	Computer Networks	4-0-0:4	2010

COURSE END SURVEY - CS010604 - Computer Networks
CO->PO MAPPING - CS010604 - Computer Networks

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CS010604 - Computer Networks

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CS010604 - Computer Networks

CS010604/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CS010604 - Computer Networks

CS010604/PSO	PSO1	PSO2	PSO3

CS010605

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010605	Software Engineering	4-0-0:4	2010

COURSE END SURVEY - CS010605 - Software Engineering
CO->PO MAPPING - CS010605 - Software Engineering

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CS010605 - Software Engineering

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CS010605 - Software Engineering

CS010605/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CS010605 - Software Engineering

CS010605/PSO	PSO1	PSO2	PSO3

CS010606

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010606	UNIX Shell Programming	4-0-0:4	2010

COURSE END SURVEY - CS010606 - UNIX Shell Programming
CO->PO MAPPING - CS010606 - UNIX Shell Programming

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CS010606 - UNIX Shell Programming

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CS010606 - UNIX Shell Programming

CS010606/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CS010606 - UNIX Shell Programming

CS010606/PSO	PSO1	PSO2	PSO3

CS010607

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010607	OPERATING SYSTEM LAB	0-0-4:0	2010

COURSE END SURVEY - CS010607 - OPERATING SYSTEM LAB
CO->PO MAPPING - CS010607 - OPERATING SYSTEM LAB

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CS010607 - OPERATING SYSTEM LAB

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CS010607 - OPERATING SYSTEM LAB

CS010607/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CS010607 - OPERATING SYSTEM LAB

CS010607/PSO	PSO1	PSO2	PSO3

CS010608

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010608	Mini Project	0-0-4:0	2010

COURSE END SURVEY - CS010608 - Mini Project
CO->PO MAPPING - CS010608 - Mini Project

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CS010608 - Mini Project

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CS010608 - Mini Project

CS010608/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CS010608 - Mini Project

CS010608/PSO	PSO1	PSO2	PSO3

CS010606L04

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010606L04	UNIX Shell Programming	4-0-0:4	2010

COURSE END SURVEY - CS010606L04 - UNIX Shell Programming
CO->PO MAPPING - CS010606L04 - UNIX Shell Programming

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CS010606L04 - UNIX Shell Programming

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CS010606L04 - UNIX Shell Programming

CS010606L04/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CS010606L04 - UNIX Shell Programming

CS010606L04/PSO	PSO1	PSO2	PSO3

English

Course Code	Course Name	L-T-P:C	Year of Introduction
English	English	4-0-0:4	2010

COURSE END SURVEY - English - English
CO->PO MAPPING - English - English

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - English - English

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - English - English

English/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - English - English

English/PSO	PSO1	PSO2	PSO3

CS302

Course Code	Course Name	L-T-P:C	Year of Introduction
CS302	Design and Analysis of Algorithms	3-1-0:4	2016

No.	Course Outcome - CS302 - Design and Analysis of Algorithms	Target
CO1	Analyze the asymptotic performance of algorithms.	62%
CO2	Solve recurrence equations using Iteration Method, Recurrence Tree Method and Master's Theorem.	62%
CO3	Employ data structures like graphs, AVL trees , RedBlack trees, B-trees etc to model engineering problems, when appropriate.	62%
CO4	Design algorithms using greedy strategy, divide and conquer approach, dynamic programming	62%
CO5	Design efficient algorithms using Back Tracking and Branch Bound Techniques for solving problems.	62%
CO6	Classify computational problems into P, NP, NP-Hard and NP-Complete	62%

COURSE END SURVEY - CS302 - Design and Analysis of Algorithms

Sl.No	Questions & Options
CO1	How far you are able to analyze the asymptotic performance of algorithms.
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO2	How far you are able to solve recurrence equations using Iteration Method, Recurrence Tree Method and Master's Theorem.
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO3	How far you are able to employ data structures like graphs, AVL trees , RedBlack trees, B-trees etc to model engineering problems, when appropriate.

	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO4	How far you are able to design algorithms using greedy strategy, divide and conquer approach, dynamic programming
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO5	How far you are able to design efficient algorithms using Back Tracking and Branch Bound Techniques for solving problems.
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO6	How far you are able to classify computational problems into P, NP, NP-Hard and NP-Complete
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*

CO->PO MAPPING - CS302 - Design and Analysis of Algorithms

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2									3
CO2	2		3									
CO3	3	3	3	3	3							3
CO4	3	3	3	3	3							3
CO5	3	3	3	3	3							3
CO6	2	3		3								3

CO->PSO MAPPING - CS302 - Design and Analysis of Algorithms

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	
CO2	3		
CO3	3		
CO4	3	3	3
CO5	3		
CO6	3	3	

COURSE->PO MAPPING - CS302 - Design and Analysis of Algorithms

CS302/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3							3

COURSE->PSO MAPPING - CS302 - Design and Analysis of Algorithms

CS302/PSO	PSO1	PSO2	PSO3
	3	3	3

CS304

Course Code	Course Name	L-T-P:C	Year of Introduction
CS304	Compiler Design	3-0-0:3	2016

No.	Course Outcome - CS304 - Compiler Design	Target
CO1	Demonstrate the role of compilers in computing and describe the lexical analysis part of the compilation.	60%
CO2	Apply the knowledge of CFG for syntax analysis and demonstrate the top- down parsing technique.	60%
CO3	Categorize and illustrate the different bottom-up parsing techniques.	60%
CO4	Design syntax directed translation schemes and demonstrate type checking process.	60%
CO5	Interpret the use of runtime environment and its issues and demonstrate the intermediate code generation process.	60%
CO6	Illustrate code optimization process and demonstrate the generation codes in computing systems	60%

COURSE END SURVEY - CS304 - Compiler Design

Sl.No	Questions & Options
CO1	How far the course helped you to demonstrate the role of compilers in computing and describe the lexical Analysis part of compilation?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	How far the course helped you to apply the knowledge of Context Free Grammars for syntax analysis and demonstrate the top-down parsing technique?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	How far you are able to categorize and illustrate the different bottom- up parsing techniques?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	How far the course aided you to design syntax directed translation schemes and also demonstrate the type checking process?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	How far the course aided you to Interpret the use of runtime environments, its issues and demonstrate intermediate code generation process.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO6	How far the course helped you to Illustrate the code optimization process and demonstrate the generation of codes.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - CS304 - Compiler Design

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO1	2	2	3		2							2
CO2	3	3	3	2	3							
CO3	2		3		3							3
CO4		2				3						
CO5		2					3					
CO6								3				

CO->PSO MAPPING - CS304 - Compiler Design

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	
CO2	3	2	
CO3	3	2	
CO4	3	2	
CO5	3	2	
CO6	3	3	3

COURSE->PO MAPPING - CS304 - Compiler Design

CS304/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	2	3	3	3	3				3

COURSE->PSO MAPPING - CS304 - Compiler Design

CS304/PSO	PSO1	PSO2	PSO3
	3	3	3

CS306

Course Code	Course Name	L-T-P:C	Year of Introduction
CS306	Computer Networks	3-0-0:3	2016

No.	Course Outcome - CS306 - Computer Networks	Target
CO1	Demonstrate Layered Architecture of Computer Networks	61%
CO2	Examine various Data Link layer design issues, protocols and evaluate different operations of the main components of computer networks	61%
CO3	Identify various network protocols and algorithms	56%
CO4	Design simple computer networks	56%

CO5	Examine the important aspects and functions of internet control protocols	59%
CO6	Analyze the features and operations of various transport and application layer protocols and examine how standard problems are solved in that context	61%

COURSE END SURVEY - CS306 - Computer Networks

Sl.No	Questions & Options
CO1	How far you are ble to demonstrate Layered Architecture of Computer Networks
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	How far you are able to examine various Data Link layer design issues, protocols and evaluate the operation of the main components of computer networks
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	How far you are able to Identify various network protocols and algorithms
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	How far you are able to design simple computer networks
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	How far you are able to examine the important aspects and functions of internet control protocols
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO6	How far you are able to analyze the features and operations of various transport and application layer protocols and examine how standard problems are solved in that context
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - CS306 - Computer Networks

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	2	3							2
CO2	3	3	3	2	3							2
CO3	3	3	3	2	3	3						3
CO4	3	3	3	2	3	3		3				3
CO5	3	2	2	3								3
CO6	3	2	2	2	2							2

CO->PSO MAPPING - CS306 - Computer Networks

CO/PSO	PSO1	PSO2	PSO3
CO1	3		
CO2	3	2	
CO3	3	2	

CO4	3	3	3
CO5	3	3	3
CO6	3	2	

COURSE->PO MAPPING - CS306 - Computer Networks

CS306/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	3		3				3

COURSE->PSO MAPPING - CS306 - Computer Networks

CS306/PSO	PSO1	PSO2	PSO3
	3	3	3

HS300

Course Code	Course Name	L-T-P:C	Year of Introduction
HS300	Principles of Management	3-0-0:3	2016

No.	Course Outcome - HS300 - Principles of Management	Target
CO1	Manage people, organisation and environment for achieving competitive advantage	66%
CO2	Critically analyse, evaluate and manipulate management theories and practices	66%
CO3	Prepare an organizational plan and execute planning process based on the goals and objectives	66%
CO4	Design organizational structure and establish the relationship among departments.	66%
CO5	Demonstrate staffing and related human resource development functions to manage and appraise employees.	66%
CO6	Lead employees, subordinates and propose control activities in organisations.	66%

COURSE END SURVEY - HS300 - Principles of Management

Sl.No	Questions & Options
CO1	To what extent are you be able to manage people, organisation and environment for achieving competitive advantage?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO2	To what extent can you critically analyse, evaluate and manipulate management theories and practices
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO3	To what extent can you prepare an organizational plan and execute planning process based on the goals and objectives
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*

CO4	To what extent can you design organizational structure and establish the relationship among departments.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO5	To what extent can you demonstrate staffing and related human resource development functions to manage and appraise employees.
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO6	To what extent can you lead employees, subordinates and propose control activities in organisations.
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*

CO->PO MAPPING - HS300 - Principles of Management

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1						3	3	2	3	3	3	
CO2		3			3						3	3
CO3		3	3							3	3	
CO4						3			3	3	3	3
CO5						3		3	3	3	3	3
CO6					3			3	3	3	3	3

CO->PSO MAPPING - HS300 - Principles of Management

CO/PSO	PSO1	PSO2	PSO3
CO1			3
CO2			3
CO3			3
CO4			3
CO5			3
CO6			3

COURSE->PO MAPPING - HS300 - Principles of Management

HS300/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		3	3		3	3	3	3	3	3	3	3

COURSE->PSO MAPPING - HS300 - Principles of Management

HS300/PSO	PSO1	PSO2	PSO3
			3

CS362

Course Code	Course Name	L-T-P:C	Year of Introduction
CS362	Computer Vision	3-0-0:3	2016

No.	Course Outcome - CS362 - Computer Vision	Target
CO1	Identify the significance of computer vision and describe the various applications of computer vison in real world.	66%
CO2	Recognize and apply the details of multiple images and its geometry in computer vision	61%
CO3	Compare and evaluate high level and model-based vision methods	61%
CO4	Explain and compare a variety of pattern classification and pattern classifier combination techniques	66%
CO5	Demonstrate and apply both supervised and unsupervised classification methods to detect and characterize patterns in real-world data	61%
CO6	Analyze, and relate different advancements in pattern recognition	61%

COURSE END SURVEY - CS362 - Computer Vision

Sl.No	Questions & Options
CO1	I was able to Identify the significance of computer vision and describe the various applications of computer vison in real world
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	This course helped me to Recognize and apply the details of multiple images and its geometry in computer vision
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	I was able to Compare and evaluate high level and model-based vision methods
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	This course help me to Explain and compare a variety of pattern classification and pattern classifier combination technique
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	This course helps me to Demonstrate and apply both supervised and unsupervised classification methods to detect and characterize patterns in real-world data
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO6	i was able to Analyze, and relate different advancements in pattern recognition
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - CS362 - Computer Vision

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2			3	2						

CO2	3	2										2
CO3	3	2										2
CO4	3		2		3							2
CO5	3	3	2		2							2
CO6	3	2	2	2	2							2

CO->PSO MAPPING - CS362 - Computer Vision

CO/PSO	PSO1	PSO2	PSO3
CO1	3	2	2
CO2	3	2	
CO3	2		
CO4	2		
CO5	3	2	
CO6	3	2	2

COURSE->PO MAPPING - CS362 - Computer Vision

CS362/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	2	2	3	2						2

COURSE->PSO MAPPING - CS362 - Computer Vision

CS362/PSO	PSO1	PSO2	PSO3
	3	2	2

CS364

Course Code	Course Name	L-T-P:C	Year of Introduction
CS364	Mobile Computing	3-0-0:3	2016

No.	Course Outcome - CS364 - Mobile Computing	Target
CO1	Understand the basic concepts of mobile computing.	56%
CO2	Propose efficient, cost effective, reliable and appropriate technology to establish Communication links	51%
CO3	Understand wireless LANs, MAC Layer protocols and management	51%
CO4	Establish the concepts of mobile internet.	51%
CO5	Understand the key protocols and platforms for mobile computing.	51%

CO6	Understand security issues in Mobile computing and implement an adhoc network system	51%

COURSE END SURVEY - CS364 - Mobile Computing

Sl.No	Questions & Options
CO1	To what extend you are able to Identify the basic concepts of mobile computing.
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO2	To what extend you are able to propose efficient, cost effective, reliable and appropriate technology to establish Communication links
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO3	To what extend you are able to analyse the implementation of wireless LANs and MAC Layer
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO4	To what extend you are able to establish the concepts of mobile internet.
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO5	To what extend you are able to examine the key protocols and platforms for mobile computing.
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO6	To what extend you are able to analyse and formulate the desired skill to set up an adhoc network system
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*

CO->PO MAPPING - CS364 - Mobile Computing

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3											
CO2	3	3	3	3	2	2	2	2				2
CO3	3	2		2	2							2
CO4	3	2	2	2	2	2	2	2				2
CO5	3	3	3	3	3							3
CO6	3	3	3	3	3	3	2	3	2			3

CO->PSO MAPPING - CS364 - Mobile Computing

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	
CO2		2	
CO3	3	3	
CO4		2	
CO5	3	3	

CO6	3	3	3

COURSE->PO MAPPING - CS364 - Mobile Computing

CS364/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	3	2	3	2			3

COURSE->PSO MAPPING - CS364 - Mobile Computing

CS364/PSO	PSO1	PSO2	PSO3
	3	3	3

CS366

Course Code	Course Name	L-T-P:C	Year of Introduction
CS366	Natural Language Processing	3-0-0:3	2016

No.	Course Outcome - CS366 - Natural Language Processing	Target
CO1	Demonstrate the fundamental concepts of Natural Language Processing.	53%
CO2	Differentiate POS techniques and illustrate grammars and different parsing methods.	50%
CO3	Analyze various ambiguity resolution strategies and other strategies for semantic interpretation.	51%
CO4	Design algorithms for NLP tasks inferring world knowledge and discourse structure.	52%
CO5	Evaluate concepts of NLP with its applications and develop useful systems for language processing .	50%

COURSE END SURVEY - CS366 - Natural Language Processing

Sl.No	Questions & Options
CO1	To what extent you are able to demonstrate the fundamental concepts of Natural Language Processing.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	To what extent you are able to differentiate POS techniques and illustrate grammars and different parsing methods.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	How well can you analyze various ambiguity resolution strategies and other strategies for semantic interpretation.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	To what extent you are able to design algorithms for NLP tasks inferring world knowledge and discourse structure.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO5	How well can you evaluvate the concepts of NLP with its applications and develop useful systems for language processing.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - CS366 - Natural Language Processing

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1										2
CO2	3	2										2
CO3	3	3	2	3	2							2
CO4	3	2	3	3	2							2
CO5	3		2			2		2				3

CO->PSO MAPPING - CS366 - Natural Language Processing

CO/PSO	PSO1	PSO2	PSO3
CO1	2		
CO2			
CO3	3	2	
CO4	3	2	
CO5	2	2	3

COURSE->PO MAPPING - CS366 - Natural Language Processing

CS366/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	2	2		2				3

COURSE->PSO MAPPING - CS366 - Natural Language Processing

CS366/PSO	PSO1	PSO2	PSO3
	3	2	3

CS368

Course Code	Course Name	L-T-P:C	Year of Introduction
CS368	Web Technologies	3-0-0:3	2016

No.	Course Outcome - CS368 - Web Technologies	Target
CO1	Identify different components in web technology .	63%
CO2	Design interactive web pages using HTML/XHTML.	63%

CO3	Organise a professional document using cascading style Sheets.	64%
CO4	Work as a group to construct websites for user interactions using JavaScript and JQuery.	63%
CO5	Analyse the different information interchange formats like XML and JSON.	63%
CO6	Develop web application using PHP.	63%

COURSE END SURVEY - CS368 - Web Technologies

Sl.No	Questions & Options
CO1	This course helped me to understand different components in web technology and to know about CGI and CMS?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	I was able to design interactive web pages using HTML/XHTML?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	I was able to present a professional document using cascading style Sheets?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	I was able to construct websites for user interactions using JavaScript and JQuery?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	This course helped me to analyse the different information interchange formats like XML and JSON?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO6	I was able to develop web application using PHP?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - CS368 - Web Technologies

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3										2
CO2	3		3		3				2			3
CO3	3		3		3				2			3
CO4	3		3		3			3	3		3	3
CO5	3	3										2
CO6	3		3		3			2	3	2	3	3

CO->PSO MAPPING - CS368 - Web Technologies

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	3

CO3	3	3	3
CO4	3	3	3
CO5	3	3	3
CO6	3	3	3

COURSE->PO MAPPING - CS368 - Web Technologies

CS368/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3		3			3	3	2	3	3

COURSE->PSO MAPPING - CS368 - Web Technologies

CS368/PSO	PSO1	PSO2	PSO3
	3	3	3

CS332

Course Code	Course Name	L-T-P:C	Year of Introduction
CS332	Microprocessor Lab	0-0-3:1	2016

No.	Course Outcome - CS332 - Microprocessor Lab	Target
CO1	Apply the fundamentals of assembly level programming of microprocessors and microcontrollers	69%
CO2	Solve basic arithmetic, logical and bit wise operations using 8086 kit.	69%
CO3	Apply the knowledge of microprocessor’s internal registers and operations by use of a PC based microprocessor simulator.	69%
CO4	Apply the concepts of 8086 programming like interfacing, interrupts, stacks & subroutines	69%
CO5	Identify and implement techniques for faster execution of instructions and improve the speed of operations by using various addressing modes	69%

COURSE END SURVEY - CS332 - Microprocessor Lab

Sl.No	Questions & Options
CO1	How far you are able to apply the fundamentals of assembly level programming of microprocessors and microcontroller
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	How far you are able to solve basic arithmetic, logical and bit wise operations using 8086 kit
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	How far you are able to apply the knowledge of microprocessor’s internal registers and operations by use of a PC based microprocessor simulator.

	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	How far you are able to apply the concepts of 8086 programming like interfacing, interrupts, stacks & subroutine
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	How far you are able to identify and implement the techniques for faster execution of instructions and improve the speed of operations by using various addressing modes
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - CS332 - Microprocessor Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3			3	3	3		2
CO2	3	2	2		3			3	3	3		2
CO3	3	3	3		3			3	3	3		
CO4	3	2	3	3	2	2		3	3	3		2
CO5	3	3	3		3			3	3	3		2

CO->PSO MAPPING - CS332 - Microprocessor Lab

CO/PSO	PSO1	PSO2	PSO3
CO1	3	2	
CO2	2		
CO3	3		2
CO4	3		3
CO5	2	2	

COURSE->PO MAPPING - CS332 - Microprocessor Lab

CS332/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	2		3	3	3		2

COURSE->PSO MAPPING - CS332 - Microprocessor Lab

CS332/PSO	PSO1	PSO2	PSO3
	3	2	3

CS334

Course Code	Course Name	L-T-P:C	Year of Introduction
CS334	Network Programming Lab	0-0-3:1	2016

No.	Course Outcome - CS334 - Network Programming Lab	Target
CO1	Configure Network related commands,system calls and configuration files in Linux Operating System.	65%
CO2	Demonstrate tools for Network Traffic Analysis and Network Monitoring.	65%
CO3	Implement system Network using CISCO configuration tools	65%
CO4	Design and deploy Computer Networks.	65%
CO5	Carry out simulation of socket programming using TCP and UDP.	65%

COURSE END SURVEY - CS334 - Network Programming Lab

Sl.No	Questions & Options
CO1	How far the course helped you to Configure Network related commands,system calls and configuration files in Linux Operating System.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	How far the course helped you to Demonstrate tools for Network Traffic Analysis and Network Monitoring.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	How far the course helped you to Implement system Network using CISCO configuration tools
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	How far the course has helped you to design and deploy Computer Networks.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	How far the course helped you to Carry out simulation of socket programming using TCP and UDP.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - CS334 - Network Programming Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3		3	2	3			3	3	3		2
CO2	3	3	3	2	3			3	3	3		3
CO3	3		3	3	3			3	3	3		3
CO4	3	3	3	3	3			3	3	3		2
CO5	3	2	3	2	2			3	3	3		2

CO->PSO MAPPING - CS334 - Network Programming Lab

CO/PSO	PSO1	PSO2	PSO3
CO1	3	2	3
CO2	3	2	3

CO3	3	2	3
CO4	3	2	3
CO5	3	2	3

COURSE->PO MAPPING - CS334 - Network Programming Lab

CS334/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3			3	3	3		3

COURSE->PSO MAPPING - CS334 - Network Programming Lab

CS334/PSO	PSO1	PSO2	PSO3
	3	2	3

CS308

Course Code	Course Name	L-T-P:C	Year of Introduction
CS308	Software Engineering and Project Management	3-0-0:3	2016

No.	Course Outcome - CS308 - Software Engineering and Project Management	Target
CO1	Analyze a problem, define and identify the computing requirements appropriate to its solution.	61%
CO2	Identify various phases of software development	61%
CO3	Identify various software process models and design using an appropriate software engineering methodology	61%
CO4	Demonstrate different software architectural styles and various coding standards	61%
CO5	Select software testing approaches such as unit testing and integration testing	61%
CO6	Recognize the role of project management including planning, scheduling, risk management, etc	61%

COURSE END SURVEY - CS308 - Software Engineering and Project Management

Sl.No	Questions & Options
CO1	How far this course has helped you to define the appropriate computing requirements to analyze a problem
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	How far you are able to identify various phases of software development?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	How far you are able to identify various process models?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
	How far can you demonstrate different software architecture styles and coding standards?

CO4	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO5	To what extent you are able to select software testing approaches such as unit testing and integration testing?
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO6	How far you are able to recognize the role of project management including planning, scheduling, risk management, etc?
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*

CO->PO MAPPING - CS308 - Software Engineering and Project Management

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	1	3		3		2	3	3		3
CO2	2	3	1	1					2			
CO3	2	2	3	3	3	3			2	2		
CO4	3		3		3				3			2
CO5	2	2	2		3			2	2	2		2
CO6	3	3	3	3	3	3		3	2	2	3	3

CO->PSO MAPPING - CS308 - Software Engineering and Project Management

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	3
CO3	3	3	3
CO4	3	3	3
CO5	3	3	3
CO6	2	3	3

COURSE->PO MAPPING - CS308 - Software Engineering and Project Management

CS308/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	3		3	3	3	3	3

COURSE->PSO MAPPING - CS308 - Software Engineering and Project Management

CS308/PSO	PSO1	PSO2	PSO3
	3	3	3

CS308

Course Code	Course Name	L-T-P:C	Year of Introduction
CS308	Software Engineering and Project Management	3-0-0:3	2016

COURSE END SURVEY - CS308 - Software Engineering and Project Management
CO->PO MAPPING - CS308 - Software Engineering and Project Management

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CS308 - Software Engineering and Project Management

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CS308 - Software Engineering and Project Management

CS308/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CS308 - Software Engineering and Project Management

CS308/PSO	PSO1	PSO2	PSO3

CS352

Course Code	Course Name	L-T-P:C	Year of Introduction
CS352	Comprehensive Exam	0-1-1:2	2016

No.	Course Outcome - CS352 - Comprehensive Exam	Target
CO1	Explain the fundamental aspects of any engineering problem/situation and discuss how to deal with them.	61%
CO2	Evaluate the theoretical concepts and complexities behind computation process using grammatical constructs and automatas.	60%
CO3	Demonstrate the internal organization, operations, processor logic design and control logic design behind a computer.	60%
CO4	Summarize the fundamental purpose, structure,functions and the key design issues of an operating system.	61%
CO5	Illustrate and compare linear and non linear data structures, their applications, various sorting, searching, hashing, memory management techniques and their performance.	60%
CO6	Demonstrate the theory and applications of database management systems.	60%

COURSE END SURVEY - CS352 - Comprehensive Exam

Sl.No	Questions & Options
CO1	To what extent you are able to explain the fundamental aspects of any engineering problem/situation and discuss how to deal with them?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO2	To what extent you are able to evaluate the theoretical concepts and complexities behind computation process using grammatical constructs and automatas?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	To what extent you are able to demonstrate the internal organization, operations, processor logic design and control logic design behind a computer?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	To what extent you are able to summarize the fundamental purpose, structure,functions and the key design issues of an operating system?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	To what extent you are able to illustrate and compare linear and non linear data structures, their applications, various sorting, searching, hashing, memory management techniques and their performance?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO6	To what extent you are able to demonstrate the theory and applications of database management systems?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - CS352 - Comprehensive Exam

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3				3		2	3	3	3
CO2	3	3	3	2	2					3		3
CO3	3	2	2	3	2					3		2
CO4	3	2	3	2	2			3		3		3
CO5	3	3	3	2	2					3		2
CO6	3	3	3	2	2				2	3		3

CO->PSO MAPPING - CS352 - Comprehensive Exam

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	
CO3	3	3	
CO4	3	3	3
CO5	3	3	3
CO6	3	3	3

COURSE->PO MAPPING - CS352 - Comprehensive Exam

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CS352/PO	3	3	3	3	2		3	3	2	3	3	3

COURSE->PSO MAPPING - CS352 - Comprehensive Exam

CS352/PSO	PSO1	PSO2	PSO3
	3	3	3

SEMESTER-7

CS010701

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010701	Web Technologies	4-0-0:4	2010

COURSE END SURVEY - CS010701 - Web Technologies
CO->PO MAPPING - CS010701 - Web Technologies

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CS010701 - Web Technologies

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CS010701 - Web Technologies

CS010701/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CS010701 - Web Technologies

CS010701/PSO	PSO1	PSO2	PSO3

CS010702

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010702	Compiler Construction	4-0-0:4	2010

COURSE END SURVEY - CS010702 - Compiler Construction
CO->PO MAPPING - CS010702 - Compiler Construction

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CS010702 - Compiler Construction

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CS010702 - Compiler Construction

CS010702/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CS010702 - Compiler Construction

CS010702/PSO	PSO1	PSO2	PSO3

CS010705

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010705	Principles of Programming	4-0-0:4	2010

COURSE END SURVEY - CS010705 - Principles of Programming
CO->PO MAPPING - CS010705 - Principles of Programming

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CS010705 - Principles of Programming

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CS010705 - Principles of Programming

CS010705/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CS010705 - Principles of Programming

CS010705/PSO	PSO1	PSO2	PSO3

CS010706

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010706	Elective II	4-0-0:4	2010

COURSE END SURVEY - CS010706 - Elective II
CO->PO MAPPING - CS010706 - Elective II

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CS010706 - Elective II

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CS010706 - Elective II

CS010706/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CS010706 - Elective II

CS010706/PSO	PSO1	PSO2	PSO3

CS010706

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010706	Elective II	4-0-0:4	2010

COURSE END SURVEY - CS010706 - Elective II
CO->PO MAPPING - CS010706 - Elective II

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CS010706 - Elective II

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CS010706 - Elective II

CS010706/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CS010706 - Elective II

CS010706/PSO	PSO1	PSO2	PSO3

CS010707

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010707	System ProgrammingLab	0-0-4:0	2010

COURSE END SURVEY - CS010707 - System ProgrammingLab
CO->PO MAPPING - CS010707 - System ProgrammingLab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CS010707 - System ProgrammingLab

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CS010707 - System ProgrammingLab

CS010707/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CS010707 - System ProgrammingLab

CS010707/PSO	PSO1	PSO2	PSO3

CS010708

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010708	Networking Lab	0-0-4:0	2010

COURSE END SURVEY - CS010708 - Networking Lab
CO->PO MAPPING - CS010708 - Networking Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CS010708 - Networking Lab

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CS010708 - Networking Lab

CS010708/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CS010708 - Networking Lab

CS010708/PSO	PSO1	PSO2	PSO3

CS010709

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010709	Seminar	4-0-0:4	2010

COURSE END SURVEY - CS010709 - Seminar
CO->PO MAPPING - CS010709 - Seminar

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CS010709 - Seminar

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CS010709 - Seminar

CS010709/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CS010709 - Seminar

CS010709/PSO	PSO1	PSO2	PSO3

CS010710

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010710	Project	0-0-4:0	2010

COURSE END SURVEY - CS010710 - Project
CO->PO MAPPING - CS010710 - Project

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CS010710 - Project

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CS010710 - Project

CS010710/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CS010710 - Project

CS010710/PSO	PSO1	PSO2	PSO3

seminar

Course Code	Course Name	L-T-P:C	Year of Introduction
seminar	Seminar	0-0-4:0	2010

COURSE END SURVEY - seminar - Seminar
CO->PO MAPPING - seminar - Seminar

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - seminar - Seminar

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - seminar - Seminar

seminar/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - seminar - Seminar

seminar/PSO	PSO1	PSO2	PSO3

project

Course Code	Course Name	L-T-P:C	Year of Introduction
project	Project	0-0-4:0	2010

COURSE END SURVEY - project - Project
CO->PO MAPPING - project - Project

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - project - Project

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - project - Project

project/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - project - Project

project/PSO	PSO1	PSO2	PSO3

CS010709

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010709	Seminar 2	0-0-4:0	2010

COURSE END SURVEY - CS010709 - Seminar 2
CO->PO MAPPING - CS010709 - Seminar 2

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

CO->PSO MAPPING - CS010709 - Seminar 2

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CS010709 - Seminar 2

CS010709/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

COURSE->PSO MAPPING - CS010709 - Seminar 2

CS010709/PSO	PSO1	PSO2	PSO3

CS401

Course Code	Course Name	L-T-P:C	Year of Introduction
CS401	Computer Graphics	4-0-0:4	2016

No.	Course Outcome - CS401 - Computer Graphics	Target
CO1	Analyze the different graphical input/output devices.	62%
CO2	Evaluate line and circle drawing algorithms.	67%
CO3	Master different two-dimensional transformations.	67%
CO4	Illustrate 3D graphics representations and transformations.	63%
CO5	Demonstrate various projections and hidden line elimination algorithms.	67%
CO6	Explain how digital images are represented and manipulated in a computer using digital image processing techniques.	62%

COURSE END SURVEY - CS401 - Computer Graphics

Sl.No	Questions & Options
CO1	How far you are able to analyze about graphic input devices?

	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	How far have you been able to evaluate line drawing or circle drawing algorithms?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	How far you have been able to master 2d transformations?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	How far you have been able to master 3d transformations?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	How far you have been able to relate projections and hidden line elimination algorithms?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO6	How far you have been able to discuss on the fundamentals of Digital Image Processing?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - CS401 - Computer Graphics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3		2									3
CO2	3		3		3							
CO3	3		3		3							
CO4	3	3	2		3							2
CO5	3	2	3		3							3
CO6	3	3	3	3	3							3

CO->PSO MAPPING - CS401 - Computer Graphics

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	
CO2	3		
CO3	3		3
CO4	3		
CO5	3		
CO6	3	3	

COURSE->PO MAPPING - CS401 - Computer Graphics

CS401/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3							3

COURSE->PSO MAPPING - CS401 - Computer Graphics

CS401/PSO	PSO1	PSO2	PSO3
	3	3	3

CS403

Course Code	Course Name	L-T-P:C	Year of Introduction
CS403	Programming Paradigms	3-0-0:3	2016

No.	Course Outcome - CS403 - Programming Paradigms	Target
CO1	Compare scope and binding of names in different programming languages.	67%
CO2	Analyze control flow structures, different control abstraction mechanisms and object oriented constructs in different programming languages.	62%
CO3	Appraise data types in different programming languages.	62%
CO4	Compare different concurrency constructs.	62%
CO5	Interpret the concepts of run- time program management.	62%
CO6	Appraise constructs in functional, logic and scripting languages.	67%

COURSE END SURVEY - CS403 - Programming Paradigms

Sl.No	Questions & Options
CO1	To what extend are you able to compare scope and binding of names in different programming languages
	Answer Choice- *Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied*
CO2	To what extend are you able to analyze control flow structures, different control abstraction mechanisms and object oriented constructs in different programming languages
	Answer Choice- *Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied*
CO3	To what extend are you able to appraise data types in different programming languages
	Answer Choice- *Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied*
CO4	To what extend are you able to compare different concurrency constructs
	Answer Choice- *Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied*
CO5	To what extend are you able to interpret the concepts of run- time program management
	Answer Choice- *Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied*
CO6	To what extend are you able to appraise constructs in functional, logic and scripting languages
	Answer Choice- *Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied*

CO->PO MAPPING - CS403 - Programming Paradigms

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3									
CO2	3	3	3		3							2
CO3	3		2									
CO4	3	3	3		3							3
CO5	3		2									
CO6	2		3		3							2

CO->PSO MAPPING - CS403 - Programming Paradigms

CO/PSO	PSO1	PSO2	PSO3
CO1	3		
CO2	3	3	
CO3	3		
CO4	3		
CO5	3		
CO6	3	3	

COURSE->PO MAPPING - CS403 - Programming Paradigms

CS403/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3		3							3

COURSE->PSO MAPPING - CS403 - Programming Paradigms

CS403/PSO	PSO1	PSO2	PSO3
	3	3	

CS405

Course Code	Course Name	L-T-P:C	Year of Introduction
CS405	Computer System Architecture	3-0-0:3	2016

No.	Course Outcome - CS405 - Computer System Architecture	Target
CO1	Identify diffferent parallel computer models and evaluate the performance of various multiprocessor systems.	61%
CO2	Examine various advanced processor architecture and understand the importance of memory hierarchy.	61%

CO3	Analyze different multiprocessor system interconnecting mechanisms and discuss protocols for enforcing cache coherence.	61%
CO4	Distinguish the different message passing and pipelining techniques.	61%
CO5	Design various processor pipeline architectures.	61%
CO6	Describe the concepts of multithreaded and data flow architectures.	61%

COURSE END SURVEY - CS405 - Computer System Architecture

Sl.No	Questions & Options
CO1	To what extent you are able to identify diffferent parallel computer models and evaluate the performance of various multiprocessor systems?
	Answer Choice- *Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful*
CO2	To what extent you are able to examine various advanced processor architecture and understand the importance of memory hierarchy?
	Answer Choice- *Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful*
CO3	To what extent you are able to analyze different multiprocessor system interconnecting mechanisms and discuss protocols for enforcing cache coherence?
	Answer Choice- *Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful*
CO4	To what extent you are able to distinguish the different message passing and pipelining techniques?
	Answer Choice- *Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful*
CO5	To what extent you are able to design various processor pipeline architectures?
	Answer Choice- *Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful*
CO6	To what extent you are able to describe the concepts of multithreaded and data flow architectures?
	Answer Choice- *Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful*

CO->PO MAPPING - CS405 - Computer System Architecture

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3								
CO2	3	2	3	2								3
CO3	3	3	2	3								
CO4	3	3	3	3								
CO5	3	2	3	3								
CO6	3	2	2	3								

CO->PSO MAPPING - CS405 - Computer System Architecture

CO/PSO	PSO1	PSO2	PSO3

CO1	2		
CO2	3	3	
CO3	3	2	
CO4	2		
CO5	3		
CO6	3	2	

COURSE->PO MAPPING - CS405 - Computer System Architecture

CS405/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3								3

COURSE->PSO MAPPING - CS405 - Computer System Architecture

CS405/PSO	PSO1	PSO2	PSO3
	3	3	

CS407

Course Code	Course Name	L-T-P:C	Year of Introduction
CS407	Distributed Computing	3-0-0:3	2016

No.	Course Outcome - CS407 - Distributed Computing	Target
CO1	Gain a clear understanding of the concepts that underlie distributed computing systems	66%
CO2	Define key mechanisms and analyze different models for distributed systems.	66%
CO3	Correlate the different types of file system naming and messaging services which are used by different client processes.	66%
CO4	Understand network file system concepts and file service architecture	66%
CO5	Compare the concurrency control mechanisms in distributed transactional environment	66%
CO6	Outline the need for mutual exclusion and election algorithms in distributed systems	66%

COURSE END SURVEY - CS407 - Distributed Computing

Sl.No	Questions & Options
CO1	To what extend are you able to distinguish distributed computing paradigm from other computing paradigms
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	Whether the student is able to identify the core concepts of distributed systems
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO3	How far you can elaborate mechanisms of inter process communication in distributed system
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO4	Application of appropriate distributed system principles helps in understanding network file system concepts and file service architecture
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	Learned concurrency control mechanisms in distributed transactional environment in an active way
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO6	How far you can outline mutual exclusion and election algorithms in distributed systems?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - CS407 - Distributed Computing

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3			3						3		3
CO2	2	3		3	2							3
CO3	3	3	2	3	3							
CO4	3		2		3							
CO5	3		2		3							
CO6	3		2		3							

CO->PSO MAPPING - CS407 - Distributed Computing

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	2
CO2	2	3	3
CO3	2	3	
CO4	3	3	
CO5	3	3	
CO6	3	3	

COURSE->PO MAPPING - CS407 - Distributed Computing

CS407/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	2	3	3					3		3

COURSE->PSO MAPPING - CS407 - Distributed Computing

CS407/PSO	PSO1	PSO2	PSO3
	3	3	3

CS409

Course Code	Course Name	L-T-P:C	Year of Introduction
CS409	Cryptography and Network Security	3-0-0:3	2016

No.	Course Outcome - CS409 - Cryptography and Network Security	Target
CO1	Summarize different classical encryption techniques	71%
CO2	Identify mathematical concepts for different cryptographic algorithms	66%
CO3	Demonstrate and apply cryptographic algorithms for encryption and key exchange	66%
CO4	Summarize different authentication and digital signature schemes	66%
CO5	Identify security issues in network, transport and application layers and outline appropriate security protocols	66%

COURSE END SURVEY - CS409 - Cryptography and Network Security

Sl.No	Questions & Options
CO1	Are you able to summarize the different classical encryption techniques?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	Are you able to identify the mathematical concepts for different cryptographic algorithms
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	This course has helped me to demonstrate and apply cryptographic algorithms for encryption and key exchange
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	Are you able to summarize different authentication and digital signature schemes?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	This course has helped me to identify security issues in network, transport and application layers and outline appropriate security protocols
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - CS409 - Cryptography and Network Security

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1					3				2
CO2	3	3	1	2	1							2
CO3	3	3	3	2	3			3				2
CO4	3	3	2		2	3		3				

CO5	3	3	3		3	3		3				

CO->PSO MAPPING - CS409 - Cryptography and Network Security

CO/PSO	PSO1	PSO2	PSO3
CO1	2	3	3
CO2	3	3	3
CO3	3	3	3
CO4	3	3	3
CO5	3	3	3

COURSE->PO MAPPING - CS409 - Cryptography and Network Security

CS409/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	2	3	3		3				2

COURSE->PSO MAPPING - CS409 - Cryptography and Network Security

CS409/PSO	PSO1	PSO2	PSO3
	3	3	3

CS467

Course Code	Course Name	L-T-P:C	Year of Introduction
CS467	Machine Learning	3-0-0:3	2016

No.	Course Outcome - CS467 - Machine Learning	Target
CO1	Identify the different machine learning approaches for supervised learning	68%
CO2	Analyze the different dimensionality reduction techniques available	68%
CO3	Identify the different classifier models suitable for machine learning	68%
CO4	Examine different approaches for training neural network and decision tree learning	68%
CO5	Enumerate the working of classifier models like Support Vector Machine and Hidden Markov Models	68%
CO6	Identify and apply different clustering algorithms in real life problems	68%

COURSE END SURVEY - CS467 - Machine Learning

Sl.No	Questions & Options
CO1	To what extend you were able to identify the different machine learning approaches for supervised learning
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO2	To what extend you were able to analyze the different dimensionality reduction techniques available
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO3	To what extend you were able to identify the different classifier models suitable for machine learning
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	To what extend you were able to examine different approaches for training neural network and decision tree learning
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO5	To what extend you were able to enumerate the working of classifier models like Support Vector Machine and Hidden Markov Models
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO6	To what extend you were able to identify and apply different clustering algorithms in real life problems
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - CS467 - Machine Learning

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	3	3	3							2
CO2	3	3	3	3	2							
CO3	3	2	3	3	3							2
CO4	3	2	3	3	3							2
CO5	3	1	3	3	3							3
CO6	3	2	3	3	3							2

CO->PSO MAPPING - CS467 - Machine Learning

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	3
CO3	3	3	3
CO4	3	3	3
CO5	3	3	3
CO6	3	3	3

COURSE->PO MAPPING - CS467 - Machine Learning

CS467/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3							3

COURSE->PSO MAPPING - CS467 - Machine Learning

CS467/PSO	PSO1	PSO2	PSO3
	3	3	3

CS431

Course Code	Course Name	L-T-P:C	Year of Introduction
CS431	Compiler Design Lab	0-0-3:1	2016

No.	Course Outcome - CS431 - Compiler Design Lab	Target
CO1	Implement Lexical Analyser for a given language	65%
CO2	Apply the knowledge of Lex and Yacc tools to develop programs	65%
CO3	Develop different parsers for a given language	65%
CO4	Apply code optimization techniques for programs	65%
CO5	Demonstrate intermediate and machine level code generation for programs	65%

COURSE END SURVEY - CS431 - Compiler Design Lab

Sl.No	Questions & Options
CO1	To what extent you are able to implement Lexical Analyser for a given language?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO2	Are you able to apply the knowledge of Lex and Yacc tools to develop programs
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	To what extent are you able to develop different parsers for a given language?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	Has this lab helped you to apply code optimization techniques for programs?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO5	This lab helped me to demonstrate intermediate and machine level code generation for programs
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - CS431 - Compiler Design Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	2	3			3	3	3		3
CO2	3	3	3		3			3	3	3		3
CO3	3	3	3	3	2			3	3	3		3

CO4	3	1	2		3			3	3	3		3
CO5	3	2	2		3			3	3	3		3

CO->PSO MAPPING - CS431 - Compiler Design Lab

CO/PSO	PSO1	PSO2	PSO3
CO1	3		3
CO2	3	3	3
CO3	3	3	3
CO4	3		3
CO5	3	2	3

COURSE->PO MAPPING - CS431 - Compiler Design Lab

CS431/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3			3	3	3		3

COURSE->PSO MAPPING - CS431 - Compiler Design Lab

CS431/PSO	PSO1	PSO2	PSO3
	3	3	3

CS451

Course Code	Course Name	L-T-P:C	Year of Introduction
CS451	Seminar & Project Preliminary	0-1-4:2	2016

No.	Course Outcome - CS451 - Seminar & Project Preliminary	Target
CO1	Evaluate current topics of professional interest and propose a work plan to solve them.	65%
CO2	Analyze diverse disciplines to apply theories, methods and knowledge bases from multiple fields to a single question or problem.	65%
CO3	Respond respectfully to opposing ideas, show depth of knowledge of complex subjects, and develop ability to synthesize, evaluate and reflect on information.	65.5%
CO4	Identify project goals, constraints, deliverables, performance criteria, control needs, and resource requirements.	73%
CO5	Develop skills to work in a team in a professional manner, respecting differences, ensuring a collaborative project environment.	70%
CO6	Demonstrate an understanding of discussions and present it effectively before the audience.	77%

COURSE END SURVEY - CS451 - Seminar & Project Preliminary

Sl.No	Questions & Options
CO1	How far the course has helped you to evaluate current topics of professional interest and propose a work plan to solve them?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	How far the course has helped you to analyze diverse disciplines to apply theories, methods and knowledge bases from multiple fields to a single question or problem?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	How far the course has helped to respond respectfully to opposing ideas, show depth of knowledge of complex subjects, and develop their ability to synthesize, evaluate and reflect on information?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	How far the course has helped you to identify project goals, constraints, deliverables, performance criteria, control needs, and resource requirements?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	How far the course has helped you to develop skills to work as a team in a professional manner, respecting differences, to ensure a collaborative project environment?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO6	How far the course has helped you to demonstrate an understanding of discussions and present it before the audience?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - CS451 - Seminar & Project Preliminary

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	2	3	2	2	2	3	2	2
CO2	2	2	2	3	3	3	2	2	2	3	2	2
CO3			2	3					3			
CO4		3		3	2	2			1		3	2
CO5						1		3	3	3	3	2
CO6					2	2		1	3	3		2

CO->PSO MAPPING - CS451 - Seminar & Project Preliminary

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	3
CO3	3	3	3
CO4	2		3

CO5			3
CO6			3

COURSE->PO MAPPING - CS451 - Seminar & Project Preliminary

CS451/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	3	2	3	3	3	3	2

COURSE->PSO MAPPING - CS451 - Seminar & Project Preliminary

CS451/PSO	PSO1	PSO2	PSO3
	3	3	3

CS463

Course Code	Course Name	L-T-P:C	Year of Introduction
CS463	Digital Image Processing	3-0-0:3	2016

No.	Course Outcome - CS463 - Digital Image Processing	Target
CO1	Analyze different methods for the acquisition, storage and representation of digital images	66%
CO2	Evaluate the role of transforms in image processing	65%
CO3	Interpret the mathematical principles behind digital image enhancement	66%
CO4	Distinguish different methods for image segmentation	64%
CO5	Comparison of various reshaping operations in image processing	66%
CO6	Demonstrate vrious morphological operations in image processing	67%

COURSE END SURVEY - CS463 - Digital Image Processing

Sl.No	Questions & Options
CO1	How the course helps to understand various techniques for acquisition, storage and representation of digital images
	Answer Choice- *Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful*
CO2	How far the course has helped you to analyze varoius transforms
	Answer Choice- *Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful*
CO3	How far the course has helped you to evaluate various image enhancement techniques
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	How far the course has helped you to analyze different methods for image segmentation

	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	How far the course has helped you to develop skills to distinguish various reshaping operations in image processing
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO6	How far the course has helped you to demonstrate an understanding of vrious morphological operations in image processing
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - CS463 - Digital Image Processing

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	2	1	1	1	1	1	1	1	1	1
CO2	3	1	2	2	1	1	1	1	1	1	1	1
CO3	2	3	2	2	1	1	1	1	1	1	1	1
CO4	1	2	2	3	1	1	1	1	1	1	1	1
CO5	1	1	3	2	2	1	1	1	1	1	1	1
CO6	2	3	2	1	1	1	2	2	1	1	1	1

CO->PSO MAPPING - CS463 - Digital Image Processing

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	1
CO2	3	1	1
CO3	2	2	1
CO4	2	3	1
CO5	2	2	2
CO6	2	1	1

COURSE->PO MAPPING - CS463 - Digital Image Processing

CS463/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	2	1	2	2	1	1	1	1

COURSE->PSO MAPPING - CS463 - Digital Image Processing

CS463/PSO	PSO1	PSO2	PSO3
	3	3	2

CS465

Course Code	Course Name	L-T-P:C	Year of Introduction
CS465	Bio Informatics	3-0-0:3	2016

No.	Course Outcome - CS465 - Bio Informatics	Target
CO1	Understand the basic concepts of Bioinformatics and its significance in biological data analysis	62%
CO2	List the different biological databses and use data retrieval tools to extract data.	62%
CO3	Analyse multiple sequences and find conserved regions	62%
CO4	Describe about various approaches in phylogenetic analysis	62%
CO5	Analyse genomic sequences and able to identify regions that encoded genes	62%
CO6	Predict RNA, Protein secondary structures	62%

COURSE END SURVEY - CS465 - Bio Informatics

Sl.No	Questions & Options
CO1	To what extent do you understand the basic concepts of Bioinformatics and its significance in biological data analysis?
	Answer Choice- *Very advanced/Advanced/Proficient/Basic/ Minimal*
CO2	To what extent are you able to List the different biological databses and use data retrieval tools to extract data?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	To what extent are you able to analyse multiple sequences and find conserved regions?
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO4	Are you able to to describe various approaches in phylogenetic analysis?
	Answer Choice- *Very advanced/Advanced/Proficient/Basic/ Minimal*
CO5	To what extent are you able to analyse genomic sequences and able to identify regions that encoded genes?
	Answer Choice- *Very advanced/Advanced/Proficient/Basic/ Minimal*
CO6	To what degree are you able to predict RNA and Protein secondary structures?
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*

CO->PO MAPPING - CS465 - Bio Informatics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2		3								3
CO2	2	2	2	3	3							1
CO3	2	2	3	3	3							3

CO4	3	2	3	3	3							2
CO5	3	3	2	3	3							1
CO6	2	2	3	3	3							1

CO->PSO MAPPING - CS465 - Bio Informatics

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	2		
CO3	2	2	3
CO4	2		2
CO5	2		2
CO6	3		2

COURSE->PO MAPPING - CS465 - Bio Informatics

CS465/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3							3

COURSE->PSO MAPPING - CS465 - Bio Informatics

CS465/PSO	PSO1	PSO2	PSO3
	3	3	3

SEMESTER-8

CS010801

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010801	High Performance Computing	3-2-0:4	2014

No.	Course Outcome - CS010801 - High Performance Computing	Target
CO1	Identify and describe the operation of parallel computer architectures.	65%
CO2	Identify the different elements involved in the Arithmetic Pipeline Design and apply them in practice when called for.	60%
CO3	Demonstrate an understanding of SIMD Array processors	62%
CO4	Analyze the advanced concepts of multiprocessor architecture, interprocess communication and synchronization	62%
CO5	Identify various design alternatives of dataflow computers.	63%

COURSE END SURVEY - CS010801 - High Performance Computing

Sl.No	Questions & Options
CO1	How far you are able to identify and describe the operation of parallel computer architectures.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	How far you are able to identify the different elements involved in the Arithmetic Pipeline Design and apply them in practice when called for.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	How far you are able to understand about SIMD array processors
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	How far you are able to analyze the advanced concepts of multiprocessor architecture, interprocess communication and synchronization
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	How far you are able to identify various design alternatives of dataflow computers.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - CS010801 - High Performance Computing

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	2	1					2	2	2	
CO2	3	3	3	3	2				3	3	2	2
CO3	2		1	2					1	1		
CO4		2		2	1		2		3	2	1	1
CO5	3		3	3	2		2		2	3	2	2

CO->PSO MAPPING - CS010801 - High Performance Computing

CO/PSO	PSO1	PSO2	PSO3
CO1	2		
CO2	2	2	2
CO3	2	1	1
CO4	2	2	
CO5	3	3	2

COURSE->PO MAPPING - CS010801 - High Performance Computing

CS010801/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	2		2		3	3	2	2

COURSE->PSO MAPPING - CS010801 - High Performance Computing

CS010801/PSO	PSO1	PSO2	PSO3
	3	3	2

CS010802

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010802	ARTIFICIAL INTELLIGENCE	2-2-0:4	2014

No.	Course Outcome - CS010802 - ARTIFICIAL INTELLIGENCE	Target
CO1	Identify the problems, problem solving techniques and learning methods in artificial intelligence.	60%
CO2	Develop skills to design small to medium size programs in Python	60%
CO3	Apply basic artificial intelligence algorithms to solve problems	60%
CO4	Analyse how uncertainty is being estimated in the knowledge representation and reasoning process, in particular, techniques based on probability theory and possibility theory (fuzzy logic)	60%
CO5	Evaluate various techniques in machine learning, such as decision tree induction	60%

COURSE END SURVEY - CS010802 - ARTIFICIAL INTELLIGENCE

Sl.No	Questions & Options
CO1	1. The course helped me to identify the problem ,problem solving and learning methods in artificial intelligence.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	2. The course helped me to develop skills to design small to medium size programs in Python.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	3. The course helped me to apply basic artificial intelligence algorithms to solve problems .
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	4. The course helped me to analyse how uncertainty is being estimated in the knowledge representation and reasoning process, in particular,techniques based on probability theory and possibility theory (fuzzy logic).
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	5. The course helped me to evaluate various techniques in machine learning, such as decision tree induction.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - CS010802 - ARTIFICIAL INTELLIGENCE

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	1	1	3		1		2	2

CO2		2	3	1	3	1	1	1		2	3	
CO3	2	3	3	2	2	2	2	1			3	3
CO4	2	1	2	3	3	3	2	3	1	2	2	1
CO5	3	2	2	2	3	3	3	1			3	1

CO->PSO MAPPING - CS010802 - ARTIFICIAL INTELLIGENCE

CO/PSO	PSO1	PSO2	PSO3
CO1	1	1	2
CO2	3	2	3
CO3	3	3	2
CO4	3	3	2
CO5	1	1	3

COURSE->PO MAPPING - CS010802 - ARTIFICIAL INTELLIGENCE

CS010802/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	3	3	3	1	2	3	3

COURSE->PSO MAPPING - CS010802 - ARTIFICIAL INTELLIGENCE

CS010802/PSO	PSO1	PSO2	PSO3
	3	3	3

CS010803

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010803	SECURITY IN COMPUTING	2-2-0:4	2014

No.	Course Outcome - CS010803 - SECURITY IN COMPUTING	Target
CO1	Identify the fundamental security features, attacks and cryptographic techniques in Computing.	70%
CO2	Apply modular arithmetic and basic cryptographic algorithms related to encryption techniques.	60%
CO3	Acquire knowledge on standard schemes used to provide confidentiality, integrity and authenticity.	60%
CO4	Make assessment on how to deploy encryption techniques to secure data in transit across data networks.	50%
CO5	Identify and classify system security threats and develop a security model to prevent, detect and recover from attacks.	70%

COURSE END SURVEY - CS010803 - SECURITY IN COMPUTING

Sl.No	Questions & Options
CO1	This course helped me to Understand the fundamental security features, attacks and cryptographic techniques in Computing
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	I was able to apply modular arithmetic and basic cryptographic algorithms related to encryption techniques.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	This course helped me to acquire knowledge on standard schemes used to provide confidentiality, integrity and authenticity.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	I was able to make assessment on how to deploy encryption techniques to secure data in transit across data networks.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	This course helped me to identify and classify system security threats and develop a security model to prevent, detect and recover from attacks.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - CS010803 - SECURITY IN COMPUTING

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2						3	2			1	
CO2	3	3		3		3						
CO3	2	2	3	2						2		
CO4		2		3				1			2	1
CO5			3	3	3				2			2

CO->PSO MAPPING - CS010803 - SECURITY IN COMPUTING

CO/PSO	PSO1	PSO2	PSO3
CO1	3		
CO2	3		
CO3	2	2	2
CO4	1		3
CO5		3	

COURSE->PO MAPPING - CS010803 - SECURITY IN COMPUTING

CS010803/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	3	3	2	2	2	2	2

COURSE->PSO MAPPING - CS010803 - SECURITY IN COMPUTING

CS010803/PSO	PSO1	PSO2	PSO3
	3	3	3

CS010806

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010806	COMPUTER GRAPHICS LAB	0-0-3:2	2014

No.	Course Outcome - CS010806 - COMPUTER GRAPHICS LAB	Target
CO1	Discuss the foundations of computer graphics	60%
CO2	Use the underlying algorithms, and mathematical concepts supporting computer graphics	60%
CO3	Illustrate clipping and view-ports object representation in relation to images displayed on screen	60%
CO4	Design and implement models and viewing transformations	60%
CO5	Develop skill to generate computer graphics animation software.	60%

COURSE END SURVEY - CS010806 - COMPUTER GRAPHICS LAB

Sl.No	Questions & Options
CO1	How far you are able to understand the basics of computer graphics
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	How far you are able to use the underlying algorithms, and mathematical concepts supporting computer graphics
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	How far you are able to illustrate clipping and view-ports object representation in relation to images displayed on screen
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	How far you are able to design and implement models and viewing transformations
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	How far you are able to develop skill to generate computer graphics animation software
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - CS010806 - COMPUTER GRAPHICS LAB

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3			1	1							
CO2	3	3		2	2							

CO3	1	2		1								
CO4	2	3		1								
CO5	2	2			3				1		2	

CO->PSO MAPPING - CS010806 - COMPUTER GRAPHICS LAB

CO/PSO	PSO1	PSO2	PSO3
CO1	1		
CO2	3		
CO3	1		
CO4	1		
CO5	3		3

COURSE->PO MAPPING - CS010806 - COMPUTER GRAPHICS LAB

CS010806/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3		2	3				1		2	

COURSE->PSO MAPPING - CS010806 - COMPUTER GRAPHICS LAB

CS010806/PSO	PSO1	PSO2	PSO3
	3		3

CS010804L01

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010804L01	E-Commerce	2-2-0:4	2014

No.	Course Outcome - CS010804L01 - E-Commerce	Target
CO1	Demonstrate an understanding of the foundations and importance of E-commerce	65%
CO2	Describe the network infrastructure and security needed for E-commerce	60%
CO3	Analyze the impact of E-commerce on business models and strategy	62%
CO4	Assess electronic payment and Data Interchange systems	64%
CO5	Use the conventional approaches that are widely used in E-Commerce applications and the current ideas that are applicable to the Electronic Commerce world.	60%

COURSE END SURVEY - CS010804L01 - E-Commerce

Sl.No	Questions & Options
CO1	The course helped me to understand the foundations and importance of E-commerce

	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	The course helped me to describe the network infrastructure and security needed for E-commerce
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	The course helped me to analyze the impact of E-commerce on business models and strategy
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	The course helped me to understand electronic payment and Data Interchange systems
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	The course helped me to compare the conventional approaches and current ideas that are applicable to the Electronic Commerce world.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - CS010804L01 - E-Commerce

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1			3			3	2					2
CO2			1		2							
CO3			3	1		2						
CO4				3	3							
CO5					3	2		1				3

CO->PSO MAPPING - CS010804L01 - E-Commerce

CO/PSO	PSO1	PSO2	PSO3
CO1			3
CO2	1	2	2
CO3		3	3
CO4	1	3	
CO5	1	2	2

COURSE->PO MAPPING - CS010804L01 - E-Commerce

CS010804L01/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
			3	3	3	3	2	1				3

COURSE->PSO MAPPING - CS010804L01 - E-Commerce

CS010804L01/PSO	PSO1	PSO2	PSO3
	1	3	3

CS010804L03

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010804L03	Bioinformatics	2-2-0:4	2014

No.	Course Outcome - CS010804L03 - Bioinformatics	Target
CO1	Distinguish between RNA classifications and interpret Genomes and Genes.	55%
CO2	Compare and analyze sequence, star and tree alignments.	51%
CO3	Interrelate data analysis methodologies of Bioinformatics	52%
CO4	Evaluate protein structure classification, prediction and assignment	53%
CO5	Demonstrate useful systems for Bioinformatics using software tools and biological databases	51%

COURSE END SURVEY - CS010804L03 - Bioinformatics

Sl.No	Questions & Options
CO1	To what extent you are able to distinguish between RNA classifications and interpret Genomes and Genes.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	To what extent you are able to compare and analyze sequence, star and tree alignments.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	How well can you interrelate data analysis methodologies of Bioinformatics
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	How well can you evaluate protein structure classification, prediction and assignment
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	To what extent you are able to demonstrate useful systems for Bioinformatics using software tools and biological databases
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - CS010804L03 - Bioinformatics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	3	2	1	1							
CO2	2	3		2								
CO3	3	3		1								
CO4	3	2		1								
CO5			3		3	1	2	1	1			2

CO->PSO MAPPING - CS010804L03 - Bioinformatics

CO/PSO	PSO1	PSO2	PSO3
CO1	1		
CO2	2		
CO3	3		
CO4	3		
CO5		3	3

COURSE->PO MAPPING - CS010804L03 - Bioinformatics

CS010804L03/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	2	3	1	2	1	1			2

COURSE->PSO MAPPING - CS010804L03 - Bioinformatics

CS010804L03/PSO	PSO1	PSO2	PSO3
	3	3	3

CS010804L06

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010804L06	Advanced Networking Trends	2-2-0:4	2014

No.	Course Outcome - CS010804L06 - Advanced Networking Trends	Target
CO1	Synthesize knowledge about Ethernet services, functions and ISDN	60%
CO2	Analyze the advanced concepts of ATM	60%
CO3	Analyze wireless LAN applications and their requirements	60%
CO4	Demonstrate the concepts of mesh networks	60%
CO5	Evaluate the performance of wireless sensor networks systems and platforms.	60%

COURSE END SURVEY - CS010804L06 - Advanced Networking Trends

Sl.No	Questions & Options
CO1	I was able to acquire knowledge about Ethernet services, functions and ISDN
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	This course helped me to Analyze the advanced concepts of ATM
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	I was able to familiar with thorough knowledge of wireless LAN applications and their requirements

	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	This course helped me to Inculcate concepts of mesh networks
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	I was able to Evaluate the performance of wireless sensor networks systems and platforms.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - CS010804L06 - Advanced Networking Trends

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	1				1					1
CO2	1	2		1			1			2		
CO3			2				3		2			2
CO4	3				1		2			2		
CO5	2		3			2	2	1			1	1

CO->PSO MAPPING - CS010804L06 - Advanced Networking Trends

CO/PSO	PSO1	PSO2	PSO3
CO1	2	2	
CO2		2	2
CO3	2	2	
CO4	2	2	2
CO5	2		

COURSE->PO MAPPING - CS010804L06 - Advanced Networking Trends

CS010804L06/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	1	1	2	3	1	2	2	1	2

COURSE->PSO MAPPING - CS010804L06 - Advanced Networking Trends

CS010804L06/PSO	PSO1	PSO2	PSO3
	2	2	2

CS010805G02

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010805G02	Neural Networks	2-2-0:4	2014

No.	Course Outcome - CS010805G02 - Neural Networks	Target
CO1	Describe the relation between human brains and simple artificial neural network models.	70%
CO2	Compare and contrast the most common architectures and learning algorithms and identify the main implementation issues for common neural network systems.	60%
CO3	Design single and multi-layer feed-forward neural networks and apply it to real classification,clustering and regression problems.	60%
CO4	Identify algorithms and applications for Radial-basis function networks and Stochastic networks.	60%
CO5	Develop and train Competitive Networks and Pattern Association networks.	60%
CO6	Design Engineering applications that can learn using neural networks.	65%

COURSE END SURVEY - CS010805G02 - Neural Networks

Sl.No	Questions & Options
CO1	The course helped me to describe the relation between human brains and simple artificial neural network models.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	The course helped me to compare and contrast the most common architectures and learning algorithms and identify the main implementation issues for common neural network systems.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	The course helped me to design single and multi-layer feed-forward neural networks and apply it to real classification,clustering and regression problems.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	The course helped me to identify algorithms and applications for Radial-basis function networks and Stochastic networks.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	The course helped me to develop and train Competitive Networks and Pattern Association.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO6	How far am I able to design Engineering applications that can learn using neural networks.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - CS010805G02 - Neural Networks

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3										
CO2	1		3	2								
CO3		2	3	2								
CO4	2			3								

CO5	2	3		2	2							
CO6			3	2								2

CO->PSO MAPPING - CS010805G02 - Neural Networks

CO/PSO	PSO1	PSO2	PSO3
CO1	2		2
CO2	2		
CO3	2	3	
CO4	2		2
CO5	2	2	3
CO6		2	3

COURSE->PO MAPPING - CS010805G02 - Neural Networks

CS010805G02/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	3	3	3	2							2

COURSE->PSO MAPPING - CS010805G02 - Neural Networks

CS010805G02/PSO	PSO1	PSO2	PSO3
	2	3	3

CS010805G04

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010805G04	Software Architecture	2-2-0:4	2014

No.	Course Outcome - CS010805G04 - Software Architecture	Target
CO1	Design and understand software architecture for software systems	60%
CO2	Recognise major software architectural styles, design patterns, and frameworks	53%
CO3	Understand the formal definition of a number of architectures and be able to reason precisely about the properties of those architectures	52%
CO4	Describe a software architecture using various documentation approaches and architectural description languages.	54%
CO5	Analyze the architectural alternatives and connectors for a problem and select among them.	60%

COURSE END SURVEY - CS010805G04 - Software Architecture

Sl.No	Questions & Options
	How far you are able to design and understand software architecture for software systems

CO1	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	How far you are able to recognise major software architectural styles, design patterns, and frameworks
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	How far you are able to understand the formal definition of a number of architectures and be able to reason precisely about the properties of those architectures
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	How far you are able to describe a software architecture using various documentation approaches and architectural description languages.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	How far you are able to analyze the architectural alternatives and connectors for a problem and select among them.
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - CS010805G04 - Software Architecture

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	3	2					2		1	
CO2	3	1										
CO3		3		3								
CO4					2				1	3		
CO5		3		1								

CO->PSO MAPPING - CS010805G04 - Software Architecture

CO/PSO	PSO1	PSO2	PSO3
CO1	3	2	3
CO2	1	1	1
CO3			3
CO4		1	1
CO5	2		1

COURSE->PO MAPPING - CS010805G04 - Software Architecture

CS010805G04/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	2				2	3	1	

COURSE->PSO MAPPING - CS010805G04 - Software Architecture

CS010805G04/PSO	PSO1	PSO2	PSO3
	3	2	3

CS010807

Course Code	Course Name	L-T-P:C	Year of Introduction
CS010807	PROJECT WORK	0-0-6:4	2014

No.	Course Outcome - CS010807 - PROJECT WORK	Target
CO1	Formulate solutions to computing problems using latest technologies and tools	60%
CO2	Work effectively in teams to design and implement solutions to computational problems and socially relevant issues	50%
CO3	Recognize the social and ethical responsibilities of a professional working in the discipline	50%
CO4	Apply advanced algorithmic and mathematical concepts to the design and analysis of software	50%
CO5	Devise a communication strategy (language, content and medium) to deliver messages according to the situation and need of audience.	60%
CO6	Deliver effective presentations, extemporaneous or impromptu oral presentations. Setting up Technical reports using technical tools.	60%

COURSE END SURVEY - CS010807 - PROJECT WORK

Sl.No	Questions & Options
CO1	Were you able to Formulate solutions to computing problems using latest technologies and tools?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	Did you get a chance to Work effectively in teams to design and implement solutions to computational problems and socially relevant issues
	Answer Choice- *Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied*
CO3	Which level of output is implemented to the social and ethical responsibilities of a professional working in the discipline
	Answer Choice- *Most acceptable/Moderately Acceptable Acceptable/Less acceptable/Not acceptable*
CO4	Satisfied with the knowledge learned in advanced algorithmic and mathematical concepts to the design and analysis of software
	Answer Choice- *Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied*
CO5	Are you satisfied with the communication strategy (language, content and medium) to deliver messages according to the situation and need of audience?
	Answer Choice- *Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied*
CO6	Were you able to prepare effective presentations and create technical reports using technical tools?
	Answer Choice- *Very advanced/Advanced/Proficient/Basic/ Minimal*

CO->PO MAPPING - CS010807 - PROJECT WORK

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3		3	2				3	3	
CO2	2	1	1				3	3	2	1	3	2
CO3	2		3		3	2			3	3	3	3
CO4	3	3	3		2	2	1		2	1	3	2
CO5									2	3	1	
CO6	1				2					3	1	

CO->PSO MAPPING - CS010807 - PROJECT WORK

CO/PSO	PSO1	PSO2	PSO3
CO1	2	2	2
CO2	1	3	3
CO3	3	2	2
CO4	3	2	3
CO5		2	
CO6	1	2	

COURSE->PO MAPPING - CS010807 - PROJECT WORK

CS010807/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3		3	2	3	3	3	3	3	3

COURSE->PSO MAPPING - CS010807 - PROJECT WORK

CS010807/PSO	PSO1	PSO2	PSO3
	3	3	3

CS402

Course Code	Course Name	L-T-P:C	Year of Introduction
CS402	Data Mining and Ware Housing	3-0-0:3	2016

No.	Course Outcome - CS402 - Data Mining and Ware Housing	Target
CO1	Identify the key processes of Data Mining and Warehousing	57%
CO2	Use appropriate techniques to convert raw data into suitable format for various data mining tasks	57%
CO3	Analyze and compare different classification algorithms and apply them in appropriate domains	57%

CO4	Evaluate the performance of various classification methods using performance metrics	57%
CO5	Use the concept of association rule mining in real world scenarios	57%
CO6	Determine appropriate clustering algorithms for various applications and extend data mining methods to new domains of data	57%

COURSE END SURVEY - CS402 - Data Mining and Ware Housing

Sl.No	Questions & Options
CO1	How far you have been able to Identify the key process of Data mining and Warehousing
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	How far you have been able to use appropriate techniques to convert raw data into suitable format for practical data mining tasks
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	How far you have been able to analyze and compare various classification algorithms and apply in appropriate domain
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	How far you have been able to analyze and compare various classification algorithms and apply in appropriate domain
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	How far you have been able to use the concept of association rule mining in real world scenario
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO6	How far you have been able to determine appropriate clustering algorithms for various applications and to extend data mining methods to the new domains of data
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - CS402 - Data Mining and Ware Housing

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3				2							2
CO2	3	2	3	3	2							3
CO3	3	3	3	3	3							2
CO4	3	3	3	3	3							3
CO5	3	3	3	3	3							2
CO6	3	3	3	3	3							3

CO->PSO MAPPING - CS402 - Data Mining and Ware Housing

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	

CO2	3	3	1
CO3	3	3	
CO4	3		1
CO5	3	3	2
CO6	3	3	3

COURSE->PO MAPPING - CS402 - Data Mining and Ware Housing

CS402/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3							3

COURSE->PSO MAPPING - CS402 - Data Mining and Ware Housing

CS402/PSO	PSO1	PSO2	PSO3
	3	3	3

CS404

Course Code	Course Name	L-T-P:C	Year of Introduction
CS404	Embedded Systems	3-0-0:3	2016

No.	Course Outcome - CS404 - Embedded Systems	Target
CO1	Demonstrate the different technologies behind embedded computing systems	65%
CO2	Analyze the different computational models used for the development of embedded systems	65%
CO3	Demonstrate software/hardware co-design techniques for microcontroller based systems	65%
CO4	Design real time embedded system using the concept of RTOS	65%
CO5	Analyze the recent trends in embedded system design and embedded networks architecture	65%

COURSE END SURVEY - CS404 - Embedded Systems

Sl.No	Questions & Options
CO1	How far you are able to demonstrate the different technologies behind embedded computing systems?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	How far you can able to analyze the different computational models used for the development of embedded systems?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	How far you can able to demonstrate software/hardware co-design techniques for microcontroller based systems ?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO4	How far you can able to design real time embedded system using the concept of RTOS?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	How far you can able to analyze the recent trends in embedded system design and embedded networks architecture?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - CS404 - Embedded Systems

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1		1	3						
CO2	3	3	2	3	1							2
CO3	2		1	3	2							2
CO4	1	2	1	3	3							2
CO5	1	3	1		1							2

CO->PSO MAPPING - CS404 - Embedded Systems

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	
CO2	2	2	1
CO3	1		1
CO4	1		2
CO5	1	3	3

COURSE->PO MAPPING - CS404 - Embedded Systems

CS404/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	2	3	3	3						2

COURSE->PSO MAPPING - CS404 - Embedded Systems

CS404/PSO	PSO1	PSO2	PSO3
	3	3	3

CS492

Course Code	Course Name	L-T-P:C	Year of Introduction
CS492	Project	0-0-9:6	2016

No.	Course Outcome - CS492 - Project	Target

CO1	Ability to think innovatively across different areas of knowledge and to generate, develop and evaluate ideas and information so as to apply these skills to the project task.	61%
CO2	Demonstrate proficiency in selection and use of relevant technologies , tools or components in design.	61%
CO3	Work effectively as a part of a team to develop and implement solutions to computational problems and deliver good quality software products.	66%
CO4	Acquire the skills to communicate effectively and to present ideas clearly and coherently to specific audience .	71%
CO5	Ability to explore problems from different angles, use materials in different ways, and ultimately grow as innovators and lifelong learners.	66%

COURSE END SURVEY - CS492 - Project

Sl.No	Questions & Options
CO1	How far students are able to think innovatively across different areas of knowledge and to generate, develop and evaluate ideas and information so as to apply these skills to the project task.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	How far students able to decide in selection and use of relevant technologies , tools or components in design.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO3	How far students Work effectively as a part of a team to develop and implement solutions to computational problems and deliver good quality software products.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	How far students are able to communicate effectively and to present ideas clearly and coherently to specific audience .
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO5	How far students are able to ability to explore problems from different angles, use materials in different ways, and ultimately grow as innovators and lifelong learners.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - CS492 - Project

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	3	3	2		2					2	3
CO2	3	2	1		3			1				3
CO3	2	3	3	2	1	3		3	3	3	3	3
CO4									1	3		
CO5	3	3	3	2	3	1	1	1			2	3

CO->PSO MAPPING - CS492 - Project

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	
CO3	1	3	2
CO4		3	
CO5	3	3	3

COURSE->PO MAPPING - CS492 - Project

CS492/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	2	3	3	1	3	3	3	3	3

COURSE->PSO MAPPING - CS492 - Project

CS492/PSO	PSO1	PSO2	PSO3
	3	3	3

CS464

Course Code	Course Name	L-T-P:C	Year of Introduction
CS464	ARTIFICIAL INTELLIGENCE	3-0-0:3	2016

No.	Course Outcome - CS464 - ARTIFICIAL INTELLIGENCE	Target
CO1	Identify the scope and limits in the field of Artificial Intelligence.	63%
CO2	Analyze and formulate the problem as a state space, graph, design heuristics and select amongst different search or game based techniques to solve them.	63%
CO3	Construct various knowledge representation schemes using state-space search techniques, expert systems, frames, semantic nets, in order to solve complex problems.	63%
CO4	Implement agents using heuristics search algorithms for game playing.	63%
CO5	Classify the different learning concepts in genetic programming and NLP for problem solving.	63%

COURSE END SURVEY - CS464 - ARTIFICIAL INTELLIGENCE

Sl.No	Questions & Options
CO1	To what extent you are able to identify the scope and limits in the field of Artificial Intelligence.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO2	To what extent you are able to analyze and formulate the problem as a state space, graph, design heuristics and select amongst different search or game based techniques to solve them.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO3	To what extent you are able to construct various knowledge representation schemes using state-space search techniques, expert systems, frames, semantic nets, in order to solve complex problems.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	To what extent you are able to implement agents using heuristics search algorithms for game playing.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO5	To what extent you are able to classify the different learning concepts in Artificial Intelligence for problem solving.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - CS464 - ARTIFICIAL INTELLIGENCE

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2										
CO2	3	3	3	3	3							3
CO3	3	3	3	3	2							
CO4	3	3	2	3	2							
CO5	3	2	2		3							3

CO->PSO MAPPING - CS464 - ARTIFICIAL INTELLIGENCE

CO/PSO	PSO1	PSO2	PSO3
CO1	3		3
CO2	3		
CO3		3	
CO4	2		
CO5	3	3	3

COURSE->PO MAPPING - CS464 - ARTIFICIAL INTELLIGENCE

CS464/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3							3

COURSE->PSO MAPPING - CS464 - ARTIFICIAL INTELLIGENCE

CS464/PSO	PSO1	PSO2	PSO3
	3	3	3

CS468

Course Code	Course Name	L-T-P:C	Year of Introduction

CS468	Cloud Computing	3-0-0:3	2016

No.	Course Outcome - CS468 - Cloud Computing	Target
CO1	Identify the significance of implementing virtualization techniques	60%
CO2	Interpret the various cloud computing models and services	60%
CO3	Compare the various public cloud platforms and software enviornments	60%
CO4	Apply appropriate cloud programming methods to solve big data problms	60%
CO5	Describe the need of security mechanisms in cloud	60%
CO6	Illustrate the use of various cloud services available online	60%

COURSE END SURVEY - CS468 - Cloud Computing

Sl.No	Questions & Options
CO1	How accurately you could identify the significance of virtualization techniques?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	How far you could interpret the various cloud computing models and services?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	What extend you could compare the various cloud platforms and software enviornments?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	How far you could apply appropriate cloud programming methods to solve big data problems?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	How effectively you could describe the need of security mechanisms in cloud?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO6	How well you could illustrate the use of various cloud services available in online?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - CS468 - Cloud Computing

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2	3							2
CO2	3	2	2	3	3							2
CO3	3	2	2		3							2
CO4	3	2	3	3	3							2
CO5	3	3	1			3		2				2

CO6	3	3	3	3	3	3		2	3	3	3	2

CO->PSO MAPPING - CS468 - Cloud Computing

CO/PSO	PSO1	PSO2	PSO3
CO1	2	3	
CO2	3	3	
CO3	3	3	
CO4	3	3	
CO5	3	3	
CO6	3	3	3

COURSE->PO MAPPING - CS468 - Cloud Computing

CS468/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	3	3	3		2	3	3	3	2

COURSE->PSO MAPPING - CS468 - Cloud Computing

CS468/PSO	PSO1	PSO2	PSO3
	3	3	3

CS472

Course Code	Course Name	L-T-P:C	Year of Introduction
CS472	Principles of Information Security	3-0-0:3	2016

No.	Course Outcome - CS472 - Principles of Information Security	Target
CO1	Identify the common computer threats faced today and implement access control mechanisms	61%
CO2	Interpret the foundational theory behind information security policy to design a secure system.	61%
CO3	Identify the potential vulnerabilities in software in a given security scenario, and evaluate on their effectiveness.	61%
CO4	Identify the different types of malwares like Viruses,Worms and Trojans and their propagation mechanisms.	66%
CO5	Justify the relevance of security in various domains like Wireless LAN and Cellphones.	61%
CO6	Develop secure web services and perform secure e-transactions.	61%

COURSE END SURVEY - CS472 - Principles of Information Security

Sl.No	Questions & Options

CO1	This course helped me to Identify the common computer threats faced today and implement access control mechanisms
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	This course helped me to interpret the foundational theory behind information security policy to design a secure system.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	This course helped me to identify the potential vulnerabilities in software in a given security scenario, and evaluate on their effectiveness.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	This course helped me to identify the different types of malwares like Viruses,Worms and Trojans and their propagation mechanisms.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	I am able to justify the relevance of security in various domains like Wireless LAN and Cellphones.
	Answer Choice- *Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied*
CO6	To what extent are you able to develop secure web services and perform secure e-transactions.
	Answer Choice- *Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied*

CO->PO MAPPING - CS472 - Principles of Information Security

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2	2	2						3
CO2	3	2	3	1	2	2						
CO3	2	3	3	2	1	2						
CO4	2	2	3		2	1		2				
CO5	2	2	2	2	1			2				3
CO6	3	2	3	1	3	1		3				2

CO->PSO MAPPING - CS472 - Principles of Information Security

CO/PSO	PSO1	PSO2	PSO3
CO1	2	3	
CO2	3		
CO3	3		1
CO4		3	
CO5		3	2
CO6	3	3	2

COURSE->PO MAPPING - CS472 - Principles of Information Security

CS472/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	3	3	3	2	3	2		3				3

COURSE->PSO MAPPING - CS472 - Principles of Information Security

CS472/PSO	PSO1	PSO2	PSO3
	3	3	2

CS466

Course Code	Course Name	L-T-P:C	Year of Introduction
CS466	Data Science	3-0-0:3	2016

No.	Course Outcome - CS466 - Data Science	Target
CO1	Understand fundamental algorithmic ideas to process data	55%
CO2	Identify and apply various machine learning models	55%
CO3	Demonstrate and understand role of R programming in data science	55%
CO4	Apply the knowledge of python based data visualization	55%
CO5	Understand Map Reduce framework and HDFS in Hadoop	55%
CO6	Demonstrate various documentation techniques	55%

COURSE END SURVEY - CS466 - Data Science

Sl.No	Questions & Options
CO1	How far you are able to Understand fundamental algorithmic ideas to process data?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO2	How far you are able to Identify and apply various machine learning models?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO3	How far you are able to Demonstrate and understand role of R programming in data science?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	How far you are able to Apply the knowledge of python based data visualization?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO5	How far you are able to Understand Map Reduce framework and HDFS in Hadoop?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
	How far you are able to Demonstrate various documentation techniques?

CO6	
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - CS466 - Data Science

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2									1	
CO2	2		2		3							
CO3			2									
CO4										2		
CO5		2										
CO6										3		

CO->PSO MAPPING - CS466 - Data Science

CO/PSO	PSO1	PSO2	PSO3
CO1			
CO2			
CO3			
CO4			
CO5			
CO6			

COURSE->PO MAPPING - CS466 - Data Science

CS466/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	2	2	2		3					3	1	

COURSE->PSO MAPPING - CS466 - Data Science

CS466/PSO	PSO1	PSO2	PSO3

M.Tech-Computer Science

SEMESTER-1

04CS6111

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS6111	Object Oriented Software Engineering	3-0-0:3	2016

No.	Course Outcome - 04CS6111 - Object Oriented Software Engineering	Target
CO1	Student is able to study how a project work can be effectively possible in team	60%
CO2	Student is able to analyse what are the various requirements needed for a project and studies different models regarding this	60%
CO3	Student is able to explain the workflow in an organisation by using pictorial representation	65%
CO4	Student is capable to design a project using various design principles	65%
CO5	Student can identify the bugs and errors in the project by various testing procedures and methods to fix it.	60%
CO6	Student analyse various case studies in a software development	60%

COURSE END SURVEY - 04CS6111 - Object Oriented Software Engineering

Sl.No	Questions & Options
CO1	Are you able to study how a project work can be effectively possible in team
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO2	Is student is able to analyse what are the various requirements needed for a project and studies different models regarding this
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO3	Is student is able to explain the workflow in an organisation by using pictorial representation
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	Is student is capable to design a project using various design principles
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO5	Is Student can identify the bugs and errors in the project by various testing procedures and methods to fix it.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO6	Is student is able to analyse various case studies in a software development
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - 04CS6111 - Object Oriented Software Engineering

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	2									
CO2				3			2				
CO3					3						
CO4					3	2	1				
CO5							2				3

CO6		2			3		2				

CO->PSO MAPPING - 04CS6111 - Object Oriented Software Engineering

CO/PSO	PSO1	PSO2	PSO3
CO1	1		
CO2	2		
CO3		2	
CO4	3		
CO5		3	
CO6		3	

COURSE->PO MAPPING - 04CS6111 - Object Oriented Software Engineering

04CS6111/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
	3	2		3	3	2	2				3

COURSE->PSO MAPPING - 04CS6111 - Object Oriented Software Engineering

04CS6111/PSO	PSO1	PSO2	PSO3
	3	3	

CS6193

Course Code	Course Name	L-T-P:C	Year of Introduction
CS6193	Network Simulation Lab	0-0-4:4	2010

COURSE END SURVEY - CS6193 - Network Simulation Lab
CO->PO MAPPING - CS6193 - Network Simulation Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11

CO->PSO MAPPING - CS6193 - Network Simulation Lab

CO/PSO	PSO1	PSO2	PSO3

COURSE->PO MAPPING - CS6193 - Network Simulation Lab

CS6193/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11

COURSE->PSO MAPPING - CS6193 - Network Simulation Lab

CS6193/PSO	PSO1	PSO2	PSO3

04CS6103

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS6103	Advanced Data Structures and Algorithms	3-1-0:4	2016

No.	Course Outcome - 04CS6103 - Advanced Data Structures and Algorithms	Target
CO1	Identify the implementation and efficiency of different tree data structures	61%
CO2	Analyse different heaps and queues and pick an appropriate data structure for a design situation	61%
CO3	Illustrate the major graph algorithms and their analyses.	61%
CO4	Interpret the algorithms for computational geometric problems.	61%
CO5	Outline what an approximation algorithm is and the benefit of using approximation algorithms and Be familiar with some approximation algorithms	61%
CO6	Illustrate different randomized algorithms and to which situations it applies.	61%

COURSE END SURVEY - 04CS6103 - Advanced Data Structures and Algorithms

Sl.No	Questions & Options
CO1	Whether the student is able to Identify the implementation and efficiency of different tree data structures
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	Whether the student is able to Analyse different heaps and queues and pick an appropriate data structure for a design situation
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	Whether the student is able to Illustrate the major graph algorithms and their analyses.
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO4	To what extend the student is able to Interpret the algorithms for computational geometric problems.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	to what extend the student is able to understand the approximation algoritham
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO6	Whether the student is able to Illustrate different randomised algorithms and to which situations it applies.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - 04CS6103 - Advanced Data Structures and Algorithms

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	2	3								
CO2	3	2	3		3						
CO3	3	3	2								
CO4	3		2								

CO5	3								1		
CO6	3	2	2								

CO->PSO MAPPING - 04CS6103 - Advanced Data Structures and Algorithms

CO/PSO	PSO1	PSO2	PSO3
CO1	3	2	
CO2	3	2	
CO3	2	3	
CO4	3	1	
CO5	1	3	
CO6	2	2	

COURSE->PO MAPPING - 04CS6103 - Advanced Data Structures and Algorithms

04CS6103/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
	3	3	3		3				1		

COURSE->PSO MAPPING - 04CS6103 - Advanced Data Structures and Algorithms

04CS6103/PSO	PSO1	PSO2	PSO3
	3	3	

04CS6105

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS6105	Computer Security and Applied Cryptography	3-0-0:3	2016

No.	Course Outcome - 04CS6105 - Computer Security and Applied Cryptography	Target
CO1	Discuss mathematical concepts used in cryptographic fundamentals	60%
CO2	Understand various ways to apply number theory in designing secure systems	60%
CO3	Demonstrate various security services and encryption techniques used in modern cryptography	65%
CO4	Compare and Analyse existing cryptographic algorithms in computing systems	63%
CO5	Illustrate various security protocols and cryptographic techniques used in transport layer security	61%
CO6	Exposure to different vulnerabilities in existing system and use of firewalls to overcome those issues	62%

COURSE END SURVEY - 04CS6105 - Computer Security and Applied Cryptography

Sl.No	Questions & Options
	How far you are able to understand mathematical concepts used in cryptography

CO1	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO2	To what extend you are able to understand fundamentals of Number theory
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	To what extend you are able to understand encryption techniques?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	How far you are able to understand the importance of cryptographic algorithms
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO5	To what extend you are able to recognise various protocols in transport layer security
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO6	how far you are able to make out vulnerabilities in computing systems
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - 04CS6105 - Computer Security and Applied Cryptography

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1		2	3								
CO2				1	3						1
CO3		2		1							2
CO4								2			
CO5				3	3				1		
CO6		3		2							

CO->PSO MAPPING - 04CS6105 - Computer Security and Applied Cryptography

CO/PSO	PSO1	PSO2	PSO3
CO1	2		
CO2	1		
CO3	2		
CO4	2		2
CO5	3		
CO6			3

COURSE->PO MAPPING - 04CS6105 - Computer Security and Applied Cryptography

04CS6105/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
		3	3	3	3			2	1		2

COURSE->PSO MAPPING - 04CS6105 - Computer Security and Applied Cryptography

04CS6105/PSO	PSO1	PSO2	PSO3
	3		3

04CS6107

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS6107	Modern Computer Networks	3-0-0:3	2016

No.	Course Outcome - 04CS6107 - Modern Computer Networks	Target
CO1	Identify the different components and their respective roles in a commu nication system	66%
CO2	Demonstrate the Layered Architecture and different categories of Computer Networks	66%
CO3	Analyze the operation of the main components of computer networks	66%
CO4	Identify various network routing protocols and algorithms	66%
CO5	Acquire the required skill to design simple computer networks	66%
CO6	Analyze different application and real time protocols	66%

COURSE END SURVEY - 04CS6107 - Modern Computer Networks

Sl.No	Questions & Options
CO1	Are you able to Identify the different components and their respective roles in a communication system?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	How far are you able to Demonstrate the Layered Architecture and different categories of Computer Networks?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	To what extend can you able to Analyze the operation of the main components of computer networks?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	Are you able to Identify various network routing protocols and algorithms?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	Has this course helped you to Acquire the required skill to design simple computer networks?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO6	How far are you able to analyse different application and real time protocols ?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - 04CS6107 - Modern Computer Networks

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	2	1	1	1	3		3			2
CO2	2	1	1	1	1	1	1	2	1	1	1
CO3	3	2	1	2	2	1	1	1	3	2	2
CO4	2	1	2	2	2	1	2	1	3	1	1
CO5	3	2	3	3	3	2	2	1	2	1	1
CO6	1	2	1	1	2	2	1	1	3		1

CO->PSO MAPPING - 04CS6107 - Modern Computer Networks

CO/PSO	PSO1	PSO2	PSO3
CO1	1	2	1
CO2	2	2	1
CO3	3	1	1
CO4	2	1	3
CO5	1	3	3
CO6	3	2	2

COURSE->PO MAPPING - 04CS6107 - Modern Computer Networks

04CS6107/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
	3	2	3	3	3	3	2	3	3	2	2

COURSE->PSO MAPPING - 04CS6107 - Modern Computer Networks

04CS6107/PSO	PSO1	PSO2	PSO3
	3	3	3

04GN6001

Course Code	Course Name	L-T-P:C	Year of Introduction
04GN6001	Research Methodology	0-2-0:2	2016

No.	Course Outcome - 04GN6001 - Research Methodology	Target
CO1	To get introduced to research philosophy and processes in general.	60%
CO2	To formulate the research problem and prepare research plan	60%
CO3	Got the basic idea of IPR, copyright and patent for the social development	60%

CO4	To apply various numerical /quantitative techniques for data analysis	60%
CO5	To prepare and communicate the research findings effectively with modern tool	60%

COURSE END SURVEY - 04GN6001 - Research Methodology

Sl.No	Questions & Options
CO1	to what extent you understand what is research means and its types
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	At what confidence level you are able to formulate and prepare research problem and plan
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO3	what level you understand the importance of IPR Copy right and patent
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO4	at what extent you apply various numerical /quantitative techniques for data analysis
	Answer Choice- *Very advanced/Advanced/Proficient/Basic/ Minimal*
CO5	how much you are capable of preparing and communicate the research findings effectively with modern tool
	Answer Choice- *Very advanced/Advanced/Proficient/Basic/ Minimal*

CO->PO MAPPING - 04GN6001 - Research Methodology

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	2	2	3			3	3			1	1
CO2	1	2	3	2	1		2				
CO3			1				2	2		3	
CO4	1	2	3	1	2	1				1	1
CO5	1	2		1	3	1	2		1	1	1

CO->PSO MAPPING - 04GN6001 - Research Methodology

CO/PSO	PSO1	PSO2	PSO3
CO1	3		1
CO2	2		1
CO3		2	
CO4			2
CO5		2	3

COURSE->PO MAPPING - 04GN6001 - Research Methodology

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11

04GN6001/PO	2	2	3	2	3	3	3	2	1	3	1

COURSE->PSO MAPPING - 04GN6001 - Research Methodology

04GN6001/PSO	PSO1	PSO2	PSO3
	3	2	3

04CS6193

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS6193	Network Simulation Lab	0-0-2:1	2016

No.	Course Outcome - 04CS6193 - Network Simulation Lab	Target
CO1	Familiarization of wireshark tool and able to analysis the transfer of packets	72%
CO2	Understand the foundations of computer network simulations	72%
CO3	Create and analyze the network traffic between two systems	72%
CO4	Examine the different protocols used in computer network environment	72%
CO5	Acquire knowledge on operation of wired and wireless networks to handle real time problems	72%

COURSE END SURVEY - 04CS6193 - Network Simulation Lab

Sl.No	Questions & Options
CO1	How far are you able to familiarize with wireshark tool and able to analysis the transfer of packets?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	Are you able to understand the foundations of computer network simulations ?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	To what extend are you create and analyze the network traffic between two systems ?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	How far are you able to examine the different protocols used in computer network environment?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	How far are you able to acquire knowledge on operation of wired and wireless networks to handle real time problems?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - 04CS6193 - Network Simulation Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	2	1	2	3	1	1	2	1		2

CO2	2	1	1	1	2	2		3	1	1	1
CO3	3	3	3	2	2	2		2	1	1	2
CO4	3	3	2	3	2	2	1	3	2	3	2
CO5	2	1	2	3	2	1	2	3	3	3	1

CO->PSO MAPPING - 04CS6193 - Network Simulation Lab

CO/PSO	PSO1	PSO2	PSO3
CO1	2	3	1
CO2	2	2	2
CO3	3	2	3
CO4	2	2	3
CO5	1	1	2

COURSE->PO MAPPING - 04CS6193 - Network Simulation Lab

04CS6193/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
	3	3	3	3	3	2	2	3	3	3	2

COURSE->PSO MAPPING - 04CS6193 - Network Simulation Lab

04CS6193/PSO	PSO1	PSO2	PSO3
	3	3	3

04CS6101

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS6101	Computational Intelligence	3-1-0:4	2016

No.	Course Outcome - 04CS6101 - Computational Intelligence	Target
CO1	Apply the knowledge of Genetic algorithm to implement new simple algorithms in advanced applications	65%
CO2	Understanding and recognizing the advantages and importance of support vector machines and its classification.	64%
CO3	Recognize Swarm intelligent systems.	68%
CO4	Comparison of particle swarm intelligent system and Genetic Algorithm	65%
CO5	Apply the knowledge of computing technique like Artificial Neural networks into various applications	67%
CO6	Thorough Understanding of Fuzzy Set Theory and Fuzzy Logic	64%

COURSE END SURVEY - 04CS6101 - Computational Intelligence

Sl.No	Questions & Options
CO1	To what extent you are able to apply the knowledge of Genetic algorithm to implement new simple algorithms in advanced applications?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	To what extent you are able to understand and recognize the advantages and importance of support vector machines and its classification?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	To what extent you are able to recognize Swarm intelligent systems?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	To what extent you are able to compare particle swarm intelligent system and Genetic Algorithm?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	To what extent you are able to apply the knowledge of computing technique like Artificial Neural networks into various applications?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO6	The concepts of fuzzy set theory covered in this module help you to solve real world applications
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - 04CS6101 - Computational Intelligence

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	1										
CO2					2						
CO3		3	3								
CO4											3
CO5									3		
CO6											

CO->PSO MAPPING - 04CS6101 - Computational Intelligence

CO/PSO	PSO1	PSO2	PSO3
CO1	2		3
CO2		3	
CO3		2	
CO4			2
CO5		3	
CO6		2	

COURSE->PO MAPPING - 04CS6101 - Computational Intelligence

04CS6101/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
	1	3	3		2				3		3

COURSE->PSO MAPPING - 04CS6101 - Computational Intelligence

04CS6101/PSO	PSO1	PSO2	PSO3
	2	3	3

04CS6191

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS6191	Seminar -1	0-0-2:2	2016

No.	Course Outcome - 04CS6191 - Seminar -1	Target
CO1	Identify and discuss real world issues	66%
CO2	Get exposure to multidisciplinary courses	65%
CO3	To develop presentation skills and apply principles of ethics and respect interaction with others	64%
CO4	Improve ability to utilise technical resources and to write technical documents	62%

COURSE END SURVEY - 04CS6191 - Seminar -1

Sl.No	Questions & Options
CO1	How far you are able to identify real world issues
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	To what extend you are able to work in other research areas?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO3	How far you are able to improve the presentation skills
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	how far you are able to use technical resources
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - 04CS6191 - Seminar -1

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	2										
CO2				3							
CO3								2		3	

CO4									3		

CO->PSO MAPPING - 04CS6191 - Seminar -1

CO/PSO	PSO1	PSO2	PSO3
CO1	2		1
CO2	1		
CO3		3	
CO4			2

COURSE->PO MAPPING - 04CS6191 - Seminar -1

04CS6191/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
	2			3				2	3	3	

COURSE->PSO MAPPING - 04CS6191 - Seminar -1

04CS6191/PSO	PSO1	PSO2	PSO3
	2	3	2

SEMESTER-2

04CS6102

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS6102	Advanced Database Management	3-0-0:3	2016

No.	Course Outcome - 04CS6102 - Advanced Database Management	Target
CO1	Design and implement Web database systems by satisfying the requirements and constraints.	72%
CO2	Apply the principles and practice of designing and implementing advanced databases	61%
CO3	Analyse the features of embedded database and distributed database	66%
CO4	Develop next generation databases such as cloud databases and column store database	61%
CO5	Evaluate how to leverage data relationships using graph databases and designing multimedia databases	61%
CO6	Identify issues in the performance of Mobile database systems and manage mobile database recovery.	61%

COURSE END SURVEY - 04CS6102 - Advanced Database Management

Sl.No	Questions & Options
CO1	How far this course help me to design and implement Web database systems by satisfying the requirements and constraints.

	Answer Choice- *Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful*
CO2	How far This course hepls me to apply the principles and practice of designing and implementing advanced databases.
	Answer Choice- *Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful*
CO3	This course helps me to analyse the features of embedded database and distributed database
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	This course helps me to develop next generation databases such as cloud databases and column store database
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	This course helps me to evaluate how to leverage data relationships using graph databases and designing multimedia databases
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO6	This course helps me to dentify issues in the performance of Mobile database systems and manage mobile database recovery.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - 04CS6102 - Advanced Database Management

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	2		1						2		
CO2	2		1						3		
CO3	2		3						2		
CO4	2		2						2		
CO5	2		2						3		
CO6	2	1	2						3		

CO->PSO MAPPING - 04CS6102 - Advanced Database Management

CO/PSO	PSO1	PSO2	PSO3
CO1	3	2	1
CO2	2	3	
CO3	3	1	1
CO4	2	1	3
CO5	2	1	
CO6	2	3	2

COURSE->PO MAPPING - 04CS6102 - Advanced Database Management

04CS6102/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
	2	1	3						3		

COURSE->PSO MAPPING - 04CS6102 - Advanced Database Management

04CS6102/PSO	PSO1	PSO2	PSO3
	3	3	3

04CS6104

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS6104	Automata Theory and Computability	3-0-0:3	2016

No.	Course Outcome - 04CS6104 - Automata Theory and Computability	Target
CO1	Analyze and design Finite Automata, identifies the properties and also summarize on minimizing a FSA.	61%
CO2	Design regular grammar, regular expression and describe Myhill- Nerode theorem and representations for regular languages.	61%
CO3	Explain context-free grammar and context-free languages, identify the Chomsky normal forms and discuss Parikhs Theorem.	61%
CO4	Design Pushdown automata, its variants and demonstrate the conversion procedures.	61%
CO5	Illustrate the notions of Turing machines, its variants and also discuss about the various levels of problem complexities.	60.5%
CO6	Demonstrate Undecidable problems about CFL and prove Buchis Logical Characterisation of Regular Language	60.5%

COURSE END SURVEY - 04CS6104 - Automata Theory and Computability

Sl.No	Questions & Options
CO1	How well you can analyse and design Finite Automata, and perform minimizing of a Finite state automata.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO2	To what extent you are able to Design regular grammar, regular expression and describe Myhill- Nerode theorem and representations for regular languages.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO3	How well you are able to explain context-free grammar and context-free languages, the Chomsky normal forms and Parikhs Theorem.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO4	How well you are able to design a push down automata for a CFL and CFG.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO5	How well can you illustrate the notions of Turing machines, its variants and various levels of problem complexities.
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*
CO6	To what extend you are able to demonstrate Undecidable problems about CFL and prove Buchis Logical Characterisation of Regular Language
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - 04CS6104 - Automata Theory and Computability

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	2	3	3	2	1					2	
CO2	3	2	1								
CO3	1	3	2	2					1		2
CO4	3	2	3						2		1
CO5	2	1	2						1		3
CO6	2	3		1				1	1	2	

CO->PSO MAPPING - 04CS6104 - Automata Theory and Computability

CO/PSO	PSO1	PSO2	PSO3
CO1		2	2
CO2	2	2	2
CO3	2	2	2
CO4	2		2
CO5		2	2
CO6		2	

COURSE->PO MAPPING - 04CS6104 - Automata Theory and Computability

04CS6104/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
	3	3	3	2	1			1	2	2	3

COURSE->PSO MAPPING - 04CS6104 - Automata Theory and Computability

04CS6104/PSO	PSO1	PSO2	PSO3
	2	2	2

04CS6106

Course Code	Course Name	L-T-P:C	Year of Introduction

04CS6106	High Performance Computer Architecture	3-0-0:3	2016

No.	Course Outcome - 04CS6106 - High Performance Computer Architecture	Target
CO1	Demonstrate the interaction of hardware and software with respect to parallel systems design and implementation.	60%
CO2	Apply Open MP programming in parallel applications.	62%
CO3	Compare and illustrate multithreading algorithms	60%
CO4	Explain Y86 instruction set architecture.	65%
CO5	Describe CUDA ,opencl and openacc programming and measuring execution time of program	65%

COURSE END SURVEY - 04CS6106 - High Performance Computer Architecture

Sl.No	Questions & Options
CO1	The course helped me to Demonstrate the interaction of hardware and software with respect to parallel systems design and implementation.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	The course helped me to apply Open MP programming in parallel applications.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	The course helped me to compare and illustrate multithreading algorithms
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	The courese helped me to explain Y86 instruction set architecture.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	The course helped me to Describe CUDA ,opencl and openacc programming and measuring execution time of program
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - 04CS6106 - High Performance Computer Architecture

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	2	1		2	1			2		1
CO2	3	2	2	3	3	3			3		2
CO3	2	3	2			3			2		2
CO4	1			1	1	3			1		1
CO5	3	3	3	2	3	2			3		2

CO->PSO MAPPING - 04CS6106 - High Performance Computer Architecture

CO/PSO	PSO1	PSO2	PSO3

CO1	2	2	
CO2	3	3	2
CO3	3	2	1
CO4	3	2	1
CO5	3	3	2

COURSE->PO MAPPING - 04CS6106 - High Performance Computer Architecture

04CS6106/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
	3	3	3	3	3	3			3		2

COURSE->PSO MAPPING - 04CS6106 - High Performance Computer Architecture

04CS6106/PSO	PSO1	PSO2	PSO3
	3	3	2

04CS6114

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS6114	Web Security	3-0-0:3	2016

No.	Course Outcome - 04CS6114 - Web Security	Target
CO1	Identify application security issues and attacks, the key problem factors and then skills, tools and techniques necessary to code defensively against web attacks.	52%
CO2	Design ways to prevent attacks on user-supplied inputs and application outputs.	52%
CO3	Identify types of SQL injection attacks and apply coding standards and tools to eliminate and prevent SQL injection.	51%
CO4	Administer ModSecurity toolkit for real-time web application monitoring, logging, and access control.	51%
CO5	Implement techniques to address network and remote attacks.	54%
CO6	Illustrate techniques to prevent Web Server Hacking and Database hacking.	54%

COURSE END SURVEY - 04CS6114 - Web Security

Sl.No	Questions & Options
CO1	Are you satisfied with your knowledge captured on application security issues and attacks, the key problem factors and then skills, tools and techniques necessary to code defensively against web attacks?
	Answer Choice- *Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied*
CO2	Were you able to design ways to prevent attacks on user-supplied inputs and application outputs?
	Answer Choice- *Very advanced/Advanced/Proficient/Basic/ Minimal*

CO3	Are you satisfied with the knowledge and experience acquired about types of SQL injection attacks and apply coding standards and tools to eliminate and prevent SQL injection?
	Answer Choice- *Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied*
CO4	Do you agree that you learned to administer ModSecurity toolkit for real-time web application monitoring, logging, and access control.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	Have you able to implement techniques to address network and remote attacks?
	Answer Choice- *Very frequently/Frequently/Rarely Very rarely/Never*
CO6	Could you be able to illustrate techniques to prevent Web Server Hacking and Database hacking.?
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*

CO->PO MAPPING - 04CS6114 - Web Security

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	2	2	2	2					1	3	1
CO2	2	2	1	2					2	1	1
CO3	2	2							2	2	3
CO4	1								1	2	2
CO5	2	1			1				1	3	2
CO6		2	1	1				1	1	2	

CO->PSO MAPPING - 04CS6114 - Web Security

CO/PSO	PSO1	PSO2	PSO3
CO1	1	2	1
CO2	2	1	
CO3	3	1	3
CO4	2	1	1
CO5	1	3	2
CO6	2	1	3

COURSE->PO MAPPING - 04CS6114 - Web Security

04CS6114/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
	2	2	2	2	1			1	2	3	3

COURSE->PSO MAPPING - 04CS6114 - Web Security

	PSO1	PSO2	PSO3

04CS6114/PSO	3	3	3

04CS6122

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS6122	Digital Image Processing	3-0-0:3	2016

No.	Course Outcome - 04CS6122 - Digital Image Processing	Target
CO1	Identify and evaluate general terminologies in digital image processing	65%
CO2	Explore different transforms used in image processing	66%
CO3	Examine various types of images, intensity transformations and spatial filtering	66%
CO4	Experiment and evaluate the methodologies for image enhancement, restoration etc	67%
CO5	Demonstrate image segmentation and Implement image analysis algorithms	66%
CO6	Apply image processing algorithms in practical applications	67%

COURSE END SURVEY - 04CS6122 - Digital Image Processing

Sl.No	Questions & Options
CO1	I was able to Identify and evaluate general terminologies in digital image processing
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	This course help me to explore different transforms used in image processing
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	This course helps me to examine various types of intensity transformations and spatial filtering
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	I was able to experiment and evaluate the methodologies for image enhancement, restoration etc
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	I was able to demonstrate image segmentation and Implement image analysis algorithms
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO6	This course helps me to apply image processing algorithms in practical applications
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - 04CS6122 - Digital Image Processing

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	1		2	1			2	1	1	

CO2	2	1	3	1		2		1	1		2
CO3	2		2	2	1		1	3		1	1
CO4	2	3	2	2	2	1		2	1		1
CO5	1	1	3	2	1		1	3		1	
CO6	1	2	2	3	1	1	1	2			1

CO->PSO MAPPING - 04CS6122 - Digital Image Processing

CO/PSO	PSO1	PSO2	PSO3
CO1	3	1	
CO2	2	3	1
CO3	2	2	1
CO4	2	3	1
CO5	3	1	1
CO6	3	2	1

COURSE->PO MAPPING - 04CS6122 - Digital Image Processing

04CS6122/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
	3	3	3	3	2	2	1	3	1	1	2

COURSE->PSO MAPPING - 04CS6122 - Digital Image Processing

04CS6122/PSO	PSO1	PSO2	PSO3
	3	3	1

04CS6192

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS6192	Mini Project	0-0-4:2	2016

No.	Course Outcome - 04CS6192 - Mini Project	Target
CO1	Demonstrate professional competency as well as research aptitude	61%
CO2	Apply knowledge and implementation skills in computer science for project implementation.	61%
CO3	Demonstrate any specific technical skills required by the topic, and apply them to project work.	61%
CO4	Implement the knowledge of advanced computing principles	61%
CO5	Illustrate relevant project-related skills, including project management and oral and written communication, and apply these to project work	61%

COURSE END SURVEY - 04CS6192 - Mini Project

Sl.No	Questions & Options
CO1	How far you are able to demonstrate professional competency and research aptitude?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	To what extent you are able to apply knowledge and implement skills in computer science for project implementation?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	How satisfied are you with learning specific skills required by the topic and apply them to your project?
	Answer Choice- *Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied*
CO4	How satisfied are you with your ability to implement advanced computing principles to your project work?
	Answer Choice- *Very satisfied/Satisfied/Neither satisfied nor dissatisfied/Dissatisfied /Very dissatisfied*
CO5	How well can you illustrate relevant project related skills, including project management and communication skills, and apply these to your project work?
	Answer Choice- *Excellent/Very Good/Good Satisfactory/Needs improvement*

CO->PO MAPPING - 04CS6192 - Mini Project

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1											
CO2											
CO3											
CO4											
CO5											

CO->PSO MAPPING - 04CS6192 - Mini Project

CO/PSO	PSO1	PSO2	PSO3
CO1			
CO2			
CO3			
CO4			
CO5			

COURSE->PO MAPPING - 04CS6192 - Mini Project

04CS6192/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11

COURSE->PSO MAPPING - 04CS6192 - Mini Project

04CS6192/PSO	PSO1	PSO2	PSO3

04CS6194

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS6194	Advanced Computing Lab	0-0-2:1	2016

No.	Course Outcome - 04CS6194 - Advanced Computing Lab	Target
CO1	Analyse an existing program for MPI and openMP parallelisation.	61%
CO2	Understand MapReduce as a computational model and implement an execution framework.	66%
CO3	Work with tools in the big data application stack such as Hadoop, yarn, hdfs etc.	61%
CO4	Use cloud infrastructure as a service and implement it using OpenStack.	65%
CO5	Apply cryptographic algorithms to analyse security attacks.	65%

COURSE END SURVEY - 04CS6194 - Advanced Computing Lab

Sl.No	Questions & Options
CO1	I was able to analyse an existing program for MPI and openMP parallelisation
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	I was able to understand MapReduce as a computational model and implement an execution framework
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	I was able to work with tools in the big data application stack such as Hadoop, Yarn, HDFS etc.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	I was able to use cloud infrastructure as a service and implement it using OpenStack
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	I was able to apply cryptographic algorithms to analyse security attacks
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - 04CS6194 - Advanced Computing Lab

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	2									
CO2	2		3	2	3						
CO3			3	2	3	1	1				2
CO4	1		2	2					1		

CO5	2	2	2		2			1		2	

CO->PSO MAPPING - 04CS6194 - Advanced Computing Lab

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	
CO2	3	3	2
CO3	1		3
CO4		2	2
CO5	3	1	

COURSE->PO MAPPING - 04CS6194 - Advanced Computing Lab

04CS6194/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
	3	2	3	2	3	1	1	1	1	2	2

COURSE->PSO MAPPING - 04CS6194 - Advanced Computing Lab

04CS6194/PSO	PSO1	PSO2	PSO3
	3	3	3

04CS6108

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS6108	Information Retrieval and Data Mining	3-0-0:3	2016

No.	Course Outcome - 04CS6108 - Information Retrieval and Data Mining	Target
CO1	Identify the key process of Information retrieval and Data mining	61%
CO2	Determine appropriate techniques to convert raw data into suitable format for practical data mining tasks	61%
CO3	Evaluate different models used for OLAP and data pre-processing	61%
CO4	Apply the techniques of association finding, and feature selection on real world data	61%
CO5	Analyse and compare various classification algorithms and apply in appropriate domain	61%
CO6	Determine appropriate clustering algorithms for various applications and to extend data mining methods to the new domains of data	61%

COURSE END SURVEY - 04CS6108 - Information Retrieval and Data Mining

Sl.No	Questions & Options
CO1	To what extend you are able to identify the key process of Information retrieval and Data mining
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO2	To what extend you are able to determine appropriate techniques to convert raw data into suitable format for practical data mining tasks
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	To what extend you are able to evaluate different models used for OLAP and data pre-processing
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	To what extend you are able to apply the techniques of association finding, and feature selection on real world data
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	To what extend you are able to analyse and compare various classification algorithms and apply in appropriate domain
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO6	To what extend you are able to determine appropriate clustering algorithms for various applications and to extend data mining methods to the new domains of data
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - 04CS6108 - Information Retrieval and Data Mining

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3	2	2	2						
CO2	2	3	3	2	3				2	2	2
CO3	3	3	2	2	3	1			2	1	1
CO4	3	3	3	3	3	2			3	1	1
CO5	3	3	3	3	3	2	1	1	2	1	1
CO6	3	3	3	3	3	2	1	1	2	2	2

CO->PSO MAPPING - 04CS6108 - Information Retrieval and Data Mining

CO/PSO	PSO1	PSO2	PSO3
CO1	2	2	1
CO2	3	3	3
CO3	3	3	2
CO4	3	3	2
CO5	3	3	2
CO6	3	3	2

COURSE->PO MAPPING - 04CS6108 - Information Retrieval and Data Mining

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11

04CS6108/PO	3	3	3	3	3	2	1	1	3	2	2

COURSE->PSO MAPPING - 04CS6108 - Information Retrieval and Data Mining

04CS6108/PSO	PSO1	PSO2	PSO3
	3	3	3

SEMESTER-3

04CS7101

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS7101	Cyber Forensics	3-0-0:3	2016

No.	Course Outcome - 04CS7101 - Cyber Forensics	Target
CO1	To learn the basics of computer forensics, investigate and learn on certification process	70%
CO2	The study of storage provision and study of acquisition tools	70%
CO3	Identifying digital evidence, performing search for the evidence on crime	70%
CO4	Obtain idea regarding Hard disks, and other forensic softwares, analysis and validation of the evidence	70%
CO5	Obtaining information on Recovering the files, copy right issues network investigation	70%
CO6	Demonstrate ideas on Cell Phone and Mobile Device forensics, applying ethics and codes to expert witnesses and generate reports using software tools	70%

COURSE END SURVEY - 04CS7101 - Cyber Forensics

Sl.No	Questions & Options
CO1	Are you able to learn the basics of computer forensics, investigate and learn on certification process?
	Answer Choice- *Very advanced/Advanced/Proficient/Basic/ Minimal*
CO2	Acquired enough knowledge on storage provision and study of acquisition tools
	Answer Choice- *Very high degree/High Degree/Moderate degree/Small Degree/Not at all*
CO3	You were able to Identify digital evidence, performing search for the evidence on crime
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO4	Rate your knowledge level on Hard disks, and other forensic softwares, analysis and validation of the evidence
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*
CO5	Do you agree that you have enough idea regarding information on Recovering the files, copy right issues network investigation

	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO6	Do you agree that you could demonstrate ideas on Cell Phone and Mobile Device forensics, applying ethics and codes to expert witnesses and generate reports using software tools
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - 04CS7101 - Cyber Forensics

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3	2	2	3		2	2		1	2
CO2	2		1	1		2	1		1		
CO3	3	2	1	1	2			1		2	
CO4		1	2		2	2		3	3	1	1
CO5	3	1	2	2			3		2		1
CO6	1		3	2		1		2		3	1

CO->PSO MAPPING - 04CS7101 - Cyber Forensics

CO/PSO	PSO1	PSO2	PSO3
CO1	2		1
CO2		2	2
CO3	1	2	
CO4	3		3
CO5	3	3	1
CO6	1	2	

COURSE->PO MAPPING - 04CS7101 - Cyber Forensics

04CS7101/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
	3	3	3	2	3	2	3	3	3	3	2

COURSE->PSO MAPPING - 04CS7101 - Cyber Forensics

04CS7101/PSO	PSO1	PSO2	PSO3
	3	3	3

04CS7109

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS7109	Big Data Processing	3-0-0:3	2016

No.	Course Outcome - 04CS7109 - Big Data Processing	Target
CO1	Demonstrate how HDFS is used in Big data applications.	52%
CO2	Analyze how data is processed using Map Reduce and infer from its different applications	52%
CO3	Differentiate and choose the best method to create and manage Big data to minimize overall resource cost.	52%
CO4	Design and develop Pig Latin scripts and Hive queries	51%
CO5	Define and interpret the Oozie Job Execution and Spark Streaming concepts.	51%

COURSE END SURVEY - 04CS7109 - Big Data Processing

Sl.No	Questions & Options
CO1	To what extend you are able to demonstrate how HDFS is used in Big data applications?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	To what extend you are able to analyze how data is processed using Map Reduce and infer from its different applications?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	To what extend you are able to differentiate and choose the best method to create and manage Big data to minimize overall resource cost?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	To what extend you are able to design and develop Pig Latin scripts and Hive queries?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	To what extend you are able to define and interpret the Oozie Job Execution and Spark Streaming concepts?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - 04CS7109 - Big Data Processing

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3		1		2						
CO2	3	3	2	1							
CO3	2		3		3						1
CO4	2	2	3	1	3	1			3		2
CO5	3	2	2		2				2		1

CO->PSO MAPPING - 04CS7109 - Big Data Processing

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	

CO2	3	2	
CO3	3		
CO4	3	3	1
CO5	3	2	1

COURSE->PO MAPPING - 04CS7109 - Big Data Processing

04CS7109/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
	3	3	3	1	3	1			3		2

COURSE->PSO MAPPING - 04CS7109 - Big Data Processing

04CS7109/PSO	PSO1	PSO2	PSO3
	3	3	1

04CS7191

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS7191	Seminar-2	0-0-2:2	2016

No.	Course Outcome - 04CS7191 - Seminar-2	Target
CO1	Evaluate recent topics of professional and personal interest.	61%
CO2	Develop an ability to effectively present and interact with a group of people.	61%
CO3	Respond respectfully to opposing ideas and develop ability to synthesize, evaluate and reflect on information.	61%
CO4	Improve ability to utilise technical resources and to write technical documents	61%
CO5	Analyze the understanding of multidisciplinary concepts to apply theories, methods and knowledge to solve a single question or problem.	61%

COURSE END SURVEY - 04CS7191 - Seminar-2

Sl.No	Questions & Options
CO1	To what extent you are able to evaluate recent topics of professional and personal interest.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	To what extend the student is able to effectively interact with a group of people.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO3	To what extend the student is able to synthesize and respond respectfully on information
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO4	What extend the student is able to write technical documents.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	What extend the student is able to understand multidisciplinary concepts and to solve problems?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*

CO->PO MAPPING - 04CS7191 - Seminar-2

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3	3	3							3
CO2		2			3	2		3		2	3
CO3	3	3	3	3				3			
CO4	3	3	2	3	3	2		3		3	
CO5	3	3	3			3			3	2	

CO->PSO MAPPING - 04CS7191 - Seminar-2

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	2
CO2			
CO3	3	3	
CO4	2		
CO5	2	3	

COURSE->PO MAPPING - 04CS7191 - Seminar-2

04CS7191/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
	3	3	3	3	3	3		3	3	3	3

COURSE->PSO MAPPING - 04CS7191 - Seminar-2

04CS7191/PSO	PSO1	PSO2	PSO3
	3	3	2

04CS7193

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS7193	Project (Phase - 1)	0-0-12:6	2016

No.	Course Outcome - 04CS7193 - Project (Phase - 1)	Target

CO1	To develop the work practice in students to apply theoretical and practical tools/techniques to solve real-life problems related to industry and current research.	71%
CO2	Complete an independent research project, resulting in at least a thesis publication, and research outputs in terms of publications in high impact factor journals, conference proceedings, and patents.	71%
CO3	Demonstrate knowledge of contemporary issues in their chosen field of research.	71%
CO4	Demonstrate an ability to present and defend their research work to a panel of experts.	61%
CO5	be able to apply the knowledge of computing tools and techniques in the selected field for solving real world problems encountered in the Software Industries.	61%

COURSE END SURVEY - 04CS7193 - Project (Phase - 1)

Sl.No	Questions & Options
CO1	Do you agree to develop the work practice in students to apply theoretical and practical tools/techniques to solve real-life problems related to industry and current research.
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO2	Is the course able to help you complete an independent research project, resulting in at least a thesis publication, and research outputs in terms of publications in high impact factor journals, conference proceedings, and patents
	Answer Choice- *Extremely helpful/Moderately helpful/ Helpful/A little helpful/Not at all helpful*
CO3	Were you able to demonstrate knowledge of contemporary issues in their chosen field of research.?
	Answer Choice- *Very frequently/Frequently/Rarely Very rarely/Never*
CO4	Were you able to present and defend your research work to a panel of experts?
	Answer Choice- *Strongly Agree/Agree/Neutral Disagree/Strongly disagree*
CO5	Rate your knowledge of computing tools and techniques in the selected field for solving real world problems encountered in the Software Industries.
	Answer Choice- *5 out of 5/4 out of 5/3 out of 5/2 out of 5/1 out of 5*

CO->PO MAPPING - 04CS7193 - Project (Phase - 1)

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3		2		2	1		1	3	3	
CO2	2	1	3	1			2	1		2	1
CO3	1	1		2	1				1	1	2
CO4		2	1	2		2	2	3		1	
CO5	2	2	3		3	1			1		2

CO->PSO MAPPING - 04CS7193 - Project (Phase - 1)

CO/PSO	PSO1	PSO2	PSO3

CO1	2	3	2
CO2	1		2
CO3	2	1	
CO4	1		3
CO5		3	1

COURSE->PO MAPPING - 04CS7193 - Project (Phase - 1)

04CS7193/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
	3	2	3	2	3	2	2	3	3	3	2

COURSE->PSO MAPPING - 04CS7193 - Project (Phase - 1)

04CS7193/PSO	PSO1	PSO2	PSO3
	2	3	3

04CS7111

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS7111	Computer Vision	3-0-0:3	2016

No.	Course Outcome - 04CS7111 - Computer Vision	Target
CO1	Identify and evaluate general terminologies in digital image processing	60%
CO2	Explore different transforms used in image processing	60%
CO3	Examine various types of images, intensity transformations and spatial filtering	60%
CO4	Experiment and evaluate the methodologies for image enhancement, restoration etc	60%
CO5	Demonstrate image segmentation and Implement image analysis algorithms	60%
CO6	Apply image processing algorithms in practical applications	60%

COURSE END SURVEY - 04CS7111 - Computer Vision

Sl.No	Questions & Options
CO1	How far you have been able to identify and evaluate general terminologies in digital image processing?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	How far you have been able to explore different transforms used in image processing
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	How far you have been able to examine various types of images, intensity transformations and spatial filtering?

	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	How far you have been able to experiment and evaluate the methodologies for image enhancement, restoration etc?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO5	How far you have been able to demonstrate image segmentation and Implement image analysis algorithms?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO6	How far you have been able to apply image processing algorithms in practical applications?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - 04CS7111 - Computer Vision

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	2							2	2	2	
CO2	2	3	3		2	2			2	2	
CO3	2		3		2				2	2	
CO4	2		3	2	2				3	3	
CO5	2		2	2	2				3	3	
CO6	2		3	2	2	2		3	3	3	

CO->PSO MAPPING - 04CS7111 - Computer Vision

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	3
CO3	3	3	3
CO4	3	3	3
CO5	3	3	3
CO6	3	3	3

COURSE->PO MAPPING - 04CS7111 - Computer Vision

04CS7111/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
	2	3	3	2	2	2		3	3	3	

COURSE->PSO MAPPING - 04CS7111 - Computer Vision

04CS7111/PSO	PSO1	PSO2	PSO3
	3	3	3

SEMESTER-4

04CS7194

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS7194	Project (Phase -II)	0-0-21:12	2016

No.	Course Outcome - 04CS7194 - Project (Phase -II)	Target
CO1	Demonstrate the depth of knowledge in the field of computer science and to generate ideas and information which can be applied to the research work	72%
CO2	Develop critical thinking and problem solving skills to plan and execute a substantial research project	68%
CO3	Identify and demonstrate various facilities in research designs and data collection strategies that are most appropriate to a particular research project	68%
CO4	Develop the skills to communicate effectively and to present ideas clearly and coherently	68%
CO5	Demonstrate leadership and professional skills requisite for future academic research and professional pursuits	68%

COURSE END SURVEY - 04CS7194 - Project (Phase -II)

Sl.No	Questions & Options
CO1	How far are you able to demonstrate the depth of knowledge in the field of computer science and to generate ideas and information which can be applied to the research work
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	How far are you able to develop critical thinking and problem solving skills to plan and execute a substantial research project
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	How far are you able to identify and demonstrate various facilities in research designs and data collection strategies that are most appropriate to a particular research project
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO4	How far are you able to develop the skills to communicate effectively and to present ideas clearly and coherently
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	How far are you able to demonstrate leadership and professional skills requisite for future academic research and professional pursuits
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - 04CS7194 - Project (Phase -II)

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3	3	3	2	2	2				

CO2	3	3	3	3	2						
CO3	2	3	3	3	3	3					
CO4				2				3	3	3	
CO5	2	2							3		3

CO->PSO MAPPING - 04CS7194 - Project (Phase -II)

CO/PSO	PSO1	PSO2	PSO3
CO1	3	3	3
CO2	3	3	3
CO3	3	3	3
CO4	3	3	3
CO5		3	3

COURSE->PO MAPPING - 04CS7194 - Project (Phase -II)

04CS7194/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
	3	3	3	3	3	3	2	3	3	3	3

COURSE->PSO MAPPING - 04CS7194 - Project (Phase -II)

04CS7194/PSO	PSO1	PSO2	PSO3
	3	3	3

PhD-PhD in Computer Science

SEMESTER-1

04CS7101

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS7101	Cyber Forensics	3-0-0:3	2016

COURSE END SURVEY - 04CS7101 - Cyber Forensics
CO->PO MAPPING - 04CS7101 - Cyber Forensics
CO->PSO MAPPING - 04CS7101 - Cyber Forensics
COURSE->PO MAPPING - 04CS7101 - Cyber Forensics
COURSE->PSO MAPPING - 04CS7101 - Cyber Forensics

04CS7111

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS7111	Computer Vision	3-0-0:3	2016

No.	Course Outcome - 04CS7111 - Computer Vision	Target
CO1	Identify and evaluate general terminologies in digital image processing	60%
CO2	Explore different transforms used in image processing	60%
CO3	Examine various types of images, intensity transformations and spatial filtering	60%
CO4	Experiment and evaluate the methodologies for image enhancement, restoration etc	60%
CO5	Demonstrate image segmentation and Implement image analysis algorithms	60%
CO6	Apply image processing algorithms in practical applications	60%

COURSE END SURVEY - 04CS7111 - Computer Vision

Sl.No	Questions & Options
CO1	How far you have been able to identify and evaluate general terminologies in digital image processing?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO2	How far you have been able to explore different transforms used in image processing?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO3	How far you have been able to examine various types of images, intensity transformations and spatial filtering?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO4	How far you have been able to experiment and evaluate the methodologies for image enhancement, restoration etc?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	How far you have been able to demonstrate image segmentation and Implement image analysis algorithms?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*
CO6	How far you have been able to apply image processing algorithms in practical applications?
	Answer Choice- *Excellent/Very Good/Good/Satisfactory/Poor*

CO->PO MAPPING - 04CS7111 - Computer Vision
CO->PSO MAPPING - 04CS7111 - Computer Vision
COURSE->PO MAPPING - 04CS7111 - Computer Vision
COURSE->PSO MAPPING - 04CS7111 - Computer Vision

04CS6107

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS6107	Modern Computer Networks	3-0-0:3	2016

COURSE END SURVEY - 04CS6107 - Modern Computer Networks
CO->PO MAPPING - 04CS6107 - Modern Computer Networks
CO->PSO MAPPING - 04CS6107 - Modern Computer Networks
COURSE->PO MAPPING - 04CS6107 - Modern Computer Networks

COURSE->PSO MAPPING - 04CS6107 - Modern Computer Networks

04CS6103

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS6103	Advanced Data Structures and Algorithms	3-1-0:4	2016

No.	Course Outcome - 04CS6103 - Advanced Data Structures and Algorithms	Target
CO1	Identify the implementation and efficiency of different tree data structures.	60%
CO2	Analyse different heaps and queues and pick an appropriate data structure for a design situation	60%
CO3	Illustrate the major graph algorithms and their analyses.	60%
CO4	Interpret the algorithms for computational geometric problems	60%
CO5	Outline what an approximation algorithm is and the benefit of using approximation algorithms and be familiar with some approximation algorithms.	60%
CO6	Illustrate different randomized algorithms and to which situations it applies.	60%

COURSE END SURVEY - 04CS6103 - Advanced Data Structures and Algorithms

Sl.No	Questions & Options
CO1	Whether the student is able to identify the implementation and efficiency of different tree data structures.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	Whether the student is able to analyse different heaps and queues and pick an appropriate data structure for design
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO3	Whether the student is able to illustrate the major graph algorithms and their analyses.
	Answer Choice- *Always/Very often/Sometimes/Rarely/Never*
CO4	To what extend the student is able to interpret the algorithms for computational geometric problems.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO5	To what extend the student is able to understand the approximation algorithm.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO6	Whether the student is able to illustrate different randomised algorithms and to which situation it applies.
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*

CO->PO MAPPING - 04CS6103 - Advanced Data Structures and Algorithms
CO->PSO MAPPING - 04CS6103 - Advanced Data Structures and Algorithms
COURSE->PO MAPPING - 04CS6103 - Advanced Data Structures and Algorithms
COURSE->PSO MAPPING - 04CS6103 - Advanced Data Structures and Algorithms

04CS6101

Course Code	Course Name	L-T-P:C	Year of Introduction
04CS6101	Computational Intelligence	3-1-0:4	2016

No.	Course Outcome - 04CS6101 - Computational Intelligence	Target
CO1	Apply the knowledge of Genetic algorithm to implement new simple algorithms in advanced applications	64%
CO2	Understanding and recognizing the advantages and importance of support vector machines and its classification.	63%
CO3	Recognize Swarm intelligent systems.	66%
CO4	Comparison of particle swarm intelligent system and Genetic Algorithm	64%
CO5	Apply the knowledge of computing technique like Artificial Neural networks into various applications	65%
CO6	Application of Fuzzy Logic Concepts in Engineering Applications	65%

COURSE END SURVEY - 04CS6101 - Computational Intelligence

Sl.No	Questions & Options
CO1	To what extent you are able to apply the knowledge of Genetic algorithm to implement new simple algorithms in advanced applications?
	Answer Choice- *Excellent/Very Good/Good/Fair/Poor*
CO2	CO3
CO4	CO5
CO6	

CO->PO MAPPING - 04CS6101 - Computational Intelligence
CO->PSO MAPPING - 04CS6101 - Computational Intelligence
COURSE->PO MAPPING - 04CS6101 - Computational Intelligence
COURSE->PSO MAPPING - 04CS6101 - Computational Intelligence

04GN6001

Course Code	Course Name	L-T-P:C	Year of Introduction
04GN6001	Research Methodology	0-2-0:2	2016

COURSE END SURVEY - 04GN6001 - Research Methodology
CO->PO MAPPING - 04GN6001 - Research Methodology
CO->PSO MAPPING - 04GN6001 - Research Methodology
COURSE->PO MAPPING - 04GN6001 - Research Methodology
COURSE->PSO MAPPING - 04GN6001 - Research Methodology

CONTINUOUS IMPROVEMENT IMPLEMENTED

Measures identified & Implemented Via AddOn, Bridge, MOOC, Conference, Workshop, Internship & Project

No	Course	Type
1	S6 HONOURS	Honours Course
2	BIOINFORMATICS -HONOURS	Honours Course
3	S7 CSE A & B HONOURS	Honours Course
4	Programming In Java	NPTEL/SWAYAM Course
5	BTech Honours 2017-21 Batch	Honours Course
6	Problem solving through Programming In C	NPTEL/SWAYAM Course
7	Database Design	Add-on Course
8	Cyber Forensics	Honours Course
9	THEORY OF COMPUTATION--REMEDIAL CLASS	Remedial Course
10	Web Security PG elecctive	Honours Course
11	Database Management System	NPTEL/SWAYAM Course
12	DATABASE DESIGN AND PROGRAMMING IN SQL	Add-on Course
13	Cryptography and network security	Remedial Course
14	Introduction to Computing and Problem Solving	Remedial Course
15	Remedial Class- PDD	Remedial Course
16	Problem solving through Programming In C	NPTEL/SWAYAM Course

S6 HONOURS

Type:	Honours Course
Details	Mobile computing :GSM AND SATELITE COMMUNICATION
Mode of Instruction:	Online Live Class
Staff(s) Associated	Elisabeth Thomas
Course(s) Associated	CS364 - Mobile Computing

BIOINFORMATICS -HONOURS

Type:	Honours Course
Details	S7 CSE A AND B
Mode of Instruction:	Fully Online Instruction

Staff(s) Associated	Tintu Alphonsa Thomas
Course(s) Associated	CS465 - Bio Informatics

S7 CSE A & B HONOURS

Type:	Honours Course
Details	1 SUBJECT & 1 MOOC COURSE IN S7
Mode of Instruction:	Fully Online Instruction, Online Resources
Staff(s) Associated	Dr.Arun K S Tintu Alphonsa Thomas Neethu C Sekhar
Course(s) Associated	CS465 - Bio Informatics CS463 - Digital Image Processing

Programming In Java

Type:	NPTEL/SWAYAM Course
Details	This course aims to cover the essential topics of Java programming so that the participants can improve their skills to cope with the current demand of IT industries and solve many problems in their own filed of studies.
Mode of Instruction:	MOOC Online, Web-enhanced learning
Staff(s) Associated	Dr. Juby Mathew Jobin T. J
Course(s) Associated	INMCA312 - Advanced Object Oriented Programming

BTech Honours 2017-21 Batch

Type:	Honours Course
Details	BTech Honours 2017-21 Batch
Mode of Instruction:	Group Activities, MOOC Online, Self learning
Staff(s) Associated	Dr. Jina Varghese Dr. Juby Mathew Syam Gopi Neethu C Sekhar
Course(s) Associated	CS362 - Computer Vision CS364 - Mobile Computing CS368 - Web Technologies

Problem solving through Programming In C

Type:	NPTEL/SWAYAM Course

Details	Problem solving through Programming In C
Mode of Instruction:	MOOC Online
Staff(s) Associated	Shiney Thomas
Course(s) Associated	EST102 - PROGRAMMING IN C

Database Design

Type:	Add-on Course
Details	The course examines data structures, file organizations, concepts and principles of DBMS's, data analysis, database design, data modeling, database management, data & query optimization, and database implementation. More specifically, the course introduces relational data models; entity-relationship modeling, SQL, data normalization, and database design.
Mode of Instruction:	Blended learning, Self learning , Web-enhanced learning
Staff(s) Associated	Dr. Juby Mathew
Course(s) Associated	INMCA305 - Introduction to RDBMS and SQL INMCA331 - RDBMS Lab

Cyber Forensics

Type:	Honours Course
Details	Honors Course for Cyber Forensics
Mode of Instruction:	Discussion, Drill and Practice, Examination
Staff(s) Associated	Jis Joe Mathew
Course(s) Associated	04CS7101 - Cyber Forensics

THEORY OF COMPUTATION--REMEDIAL CLASS

Type:	Remedial Course
Details	THIS COURSE IS TO MAKE STUDENTS MUCH MORE FAMILIAR WITH PROBLEMS AND THEOREMS IN THEORY OF COMPUTATION AND ALSO TO UPLIFT WEAKER STUDENTS
Mode of Instruction:	Brainstorming, Discussion, Drill and Practice, Group Activities, Lecture, Self learning , Tutorial
Staff(s) Associated	Jayakrishna V
Course(s) Associated	CS301 - Theory of Computation

Web Security PG elecctive

Type:	Honours Course
Details	Web Security -Sem 2 PG elective for Current S5 CSE students
Mode of Instruction:	Lecture
Staff(s) Associated	Santhoshkumar G S
Course(s) Associated	04CS6114 - Web Security

Database Management System

Type:	NPTEL/SWAYAM Course
Details	DBMS is so fundamental that all companies dealing with systems as well as application development (including web, IoT, embedded systems, data mining, machine learning) have a need for the same. These include – Microsoft, Samsung, Xerox, Yahoo, Google, IBM, TCS, Infosys, Amazon, Flipkart, etc.
Mode of Instruction:	MOOC Online, Self learning
Staff(s) Associated	Dr. Juby Mathew Meera Rose Mathew
Course(s) Associated	INMCA305 - Introduction to RDBMS and SQL

DATABASE DESIGN AND PROGRAMMING IN SQL

Type:	Add-on Course
Details	10 weeks virtual training & certification program on DATABASE DESIGN AND PROGRAMMING IN SQL
Mode of Instruction:	Self learning , Web-enhanced learning
Staff(s) Associated	Dr. Juby Mathew
Course(s) Associated	RLMCA266 - Advanced Database Systems

Cryptography and network security

Type:	Remedial Course
Details	Weak student
Mode of Instruction:	Direct Instruction, Discussion, Question and Answer
Staff(s) Associated	Shiney Thomas
Course(s) Associated	CS409 - Cryptography and Network Security

Introduction to Computing and Problem Solving

Type:	Remedial Course
Details	Remedial Class for failed students
Mode of Instruction:	Direct Instruction
Staff(s) Associated	BINI M ISSAC
Course(s) Associated	

Remedial Class- PDD

Type:	Remedial Course
Details	Database design and details with querying concepts
Mode of Instruction:	Discussion, Lecture, Question and Answer
Staff(s) Associated	Anju Joseph
Course(s) Associated	CS208 - Principles of Data Base Design

Problem solving through Programming In C

Type:	NPTEL/SWAYAM Course
Details	This course is aimed at enabling the students to, formulate simple algorithms for arithmetic and logical problems, translate the algorithms to programs (in C language), test and execute the programs and correct syntax and logical errors, implement conditional branching, iteration and recursion, decompose a problem into functions.
Mode of Instruction:	MOOC Online, Self learning
Staff(s) Associated	Dr. Juby Mathew
Course(s) Associated	INMCA108 - Problem Solving and Structured Programming