APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Curriculum

for

B.Tech Degree

Semesters III to VIII

2016

Metallurgy

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

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BRANCH:*Metallurgy*

SEMESTER - 3

Course Code	*Course Name*	*L-T-P*	*Credits*	*Exam Slot*
MA201	Linear Algebra & Complex Analysis	3-1-0	4	A
ME201	Mechanics of Solids	3-1-0	4	B
MT201	Metallurgical Thermodynamics and Kinetics	3-1-0	4	C
MT203	Mineral Beneficiation	3-1-0	4	D
MT205	Computer Programming In C	3-0-0	3	E
HS200/ HS210	Business Economics/Life Skills	3-0-0/ 2-0-2	3	F
MT231	Mineral Dressing Lab	0-0-3	1	S
MT233	Computer Programming In C Lab	0-0-3	1	T

Total Credits = 24 Hours: 28/29 Cumulative Credits= 71

SEMESTER - 4

Course Code	*Course Name*	*L-T-P*	*Credits*	*Exam Slot*
MA206	Probability & Statistics and Numerical Methods	3-1-0	4	A
MT202	Physical Metallurgy	3-1-0	4	B
MT204	Heat, Mass and Momentum Transport	4-0-0	4	C
MT206	Metallurgical Heat Treatments	3-0-0	3	D
MT208	Mechanical Behaviour and Testing	3-0-0	3	E
HS210/ HS200	Life Skills/Business Economics	2-0-2/ 3-0-0	3	F
MT232	Metallography and Heat Treatment Lab	0-0-3	1	S
MT234	Mechanical Testing Lab	0-0-3	1	T

Total Credits = 23 Hours 28/27 Cumulative Credits= 94

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SEMESTER - 5

Course Code	*Course Name*	*L-T-P*	*Credits*	*Exam Slot*
MT301	Metal Joining Technology	3-1-0	4	A
MT303	Iron and Steel Making	3-0-0	3	B
MT305	Non-Ferrous Extractive Metallurgy	3-0-0	3	C
MT307	Foundry Technology	3-0-0	3	D
HS300	Principles of Management	3-0-0	3	**E**
	Elective 1	3-0-0	3	**F**
MT341	Design Project	0-1-2	2	**S**
MT331	Welding Lab	0-0-3	1	**T**
MT333	Foundry Lab	0-0-3	1	**U**

Total Credits = 23 Hours: 28 Cumulative Credits= 117

Elective 1:-
1. MT361 Special Steels and Cast Irons
2. MT363 Design and Selection of Materials
3. ME375 Mechanical Technology
4. MT365 Electrical, Electronic, Optical and Magnetic Materials
5. MT367 Measurements and Control

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SEMESTER - 6

Course Code	*Course Name*	*L-T-P*	*Credits*	*Exam Slot*
MT302	Corrosion Engineering	4-0-0	4	A
MT304	Advanced and Secondary Steel Making	3-0-0	3	B
MT306	Non-Ferrous Physical Metallurgy	3-0-0	3	C
MT308	Fuels, Furnace and Refractories	3-0-0	3	D
MT312	Materials Characterisation	3-0-0	3	E
	Elective 2	3-0-0	3	F
MT332	Non-Ferrous Physical Metallurgy Lab	0-0-3	1	S
MT334	Corrosion Lab	0-0-3	1	T
MT352	Comprehensive Exam	0-1-1	2	U

Total Credits = 23 **Hours:27** **Cumulative Credits= 140**

Elective 2:-

1. MT362 Nuclear Metallurgy
2. MT364 Nano-materials and Applications
3. MT366 Semiconductor Materials and Devices
4. MT368 Ceramic Processing
5. MT372 Polymer Science and Technology

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SEMESTER - 7

Course Code	Course Name	L-T-P	Credits	Exam Slot
MT401	Non-Destructive Testing	4-0-0	4	A
MT403	Creep, Fatigue and Fracture	3-0-0	3	B
MT405	Metallurgical Failure Analysis	3-0-0	3	C
MT407	Powder Metallurgy	3-0-0	3	D
MT409	Deformation Processing	3-0-0	3	E
	Elective 3	3-0-0	3	F
MT451	Seminar & Project Preliminary	0-1-4	2	S
MT431	NDT Lab	0-0-3	1	T

Total Credits = 22 **Hours: 27** **Cumulative Credits= 162**

Elective 3:-

1. MT461 High Temperature Materials
2. MT463 Vacuum Science and Deposition Techniques
3. MT465 Sensors for Engineering Applications
4. MT467 Metallurgy of Tool Materials
5. MT469 Surface Engineering

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SEMESTER - 8

Course Code	*Course Name*	*L-T-P*	*Credits*	*Exam Slot*
MT402	Ceramics, Polymers and Composite Materials	3-0-0	3	A
MT404	Fracture Mechanics	3-0-0	3	B
	Elective 4	3-0-0	3	C
	Elective 5 (Non Departmental)	3-0-0	3	D
MT492	Project		6	S

Total Credits = 18 Hours: 30 Cumulative Credits= 180

Elective 4:-

1. MT462 Advances in Metal Forming
2. MT464 Energy Storing Devices and Fuel Cells
3. MT466 Composite Materials
4. MT468 Non Traditional machining
5. MT472 Emerging materials

ELECTIVE 5 (NON DEPARTMENTAL ELECTIVE COURSES)

(Note:- If a student has studied or chosen the elective course given within the brackets then the corresponding ND elective cannot be chosen)

1. AO482 FLIGHT AGAIST GRAVITY
2. AE482 INDUSTRIAL INSTRUMENTATION
3. AE484 INSTRUMENTATION SYSTEM DESIGN
4. AU484 MICROPROCESSOR AND EMBEDDED SYSTEMS
5. AU486 NOISE, VIBRATION AND HARSHNESS
6. BM482 BIOMEDICAL INSTRUMENTATION
7. BM484 MEDICAL IMAGING & IMAGE PROCESSING TECHNIQUES
8. BT461 DESIGN OF BIOLOGICAL WASTEWATER SYSTEMS
9. BT362 SUSTAINABLE ENERGY PROCESSES
10. CH482 PROCESS UTILITIES AND PIPE LINE DESIGN
11. CH484 FUEL CELL TECHNOLOGY(MT 464 ENERGY STORING DEVICES AND FUEL CELLS)
12. CE482 ENVIRONMENTAL IMPACT ASSESSMENT
13. CE484 APPLIED EARTH SYSTEMS
14. CE486 GEO INFORMATICS FOR INFRASTRUCTURE MANAGEMENT
15. CE488 DISASTER MANAGEMENT
16. CE494 ENVIRONMENT HEALTH AND SAFETY
17. CS482 DATA STRUCTURES
18. CS484 COMPUTER GRAPHICS
19. CS486 OBJECT ORIENTED PROGRAMMING
20. CS488 C # AND .NET PROGRAMMING
21. EE482 ENERGY MANAGEMENT AND AUDITING
22. EE484 CONTROL SYSTEMS
23. EE486 SOFT COMPUTING

24. EE488 INDUSTRIAL AUTOMATION

25. EE494 INSTRUMENTATION SYSTEMS

26. EC482 BIOMEDICAL ENGINEERING

27. FT482 FOOD PROCESS ENGINEERING

28. FT484 FOOD STORAGE ENGINEERING

29. FT486 FOOD ADDITIVES AND FLAVOURING

30.IE482 FINANCIAL MANAGEMENT

31. IE484 INTRODUCTION TO BUSINESS ANALYTICS

32.IE486 DESIGN AND ANALYSIS OF EXPERIMENTS

33. IE488 TOTAL QUALITY MANAGEMENT

34.IC482 BIOMEDICAL SIGNAL PROCESSING

35. IT482 INFORMATION STORAGE MANAGEMENT

36. MA482 APPLIED LINEAR ALGEBRA

37. MA484 OPERATIONS RESEARCH

38. MA486 ADVANCED NUMERICAL COMPUTATIONS

39. MA488 CRYPTOGRAPHY

40.ME484 FINITE ELEMENT ANALYSIS

41.ME482 ENERGY CONSERVATION AND MANAGEMENT

42.ME471 OPTIMIZATION TECHNIQUES

43.MP482 PRODUCT DEVELOPMENT AND DESIGN

44. MP469 INDUSTRIAL PSYCHOLOGY & ORGANIZATIONAL BEHAVIOUR

45. MP484 PROJECT MANAGEMENT

46. MR482 MECHATRONICS

47. FS482 RESPONSIBLE ENGINEERING

48. SB482 DREDGERS AND HARBOUR CRAFTS

49. HS482 PROFESSIONAL ETHICS