



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF MECHANICAL ENGINEERING

COURSE STRUCTURE M.Tech ME
ADVANCED MANUFACTURING & MECHANICAL SYSTEM DESIGN
Programme

(Applicable for batches admitted from 2019-2020)



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

I Semester

S.No	Course Code	Course Name	L	T	P	Credits
1	MM 101	Automation in Manufacturing	3	0	0	3
2	MM 102	Advanced Manufacturing Processes-I	3	0	0	3
3	MM 103	Program Elective – 1	3	0	0	3
	MM 1031	Design for Manufacturing & Assembly				
	MM 1032	Quality Engineering in Manufacturing				
	MM 1033	Total Quality Management				
4	MM 104	Program Elective – 2	3	0	0	3
	MM 1041	Optimization & Reliability				
	MM 1042	Materials Technology				
	MM 1043	Precision Engineering				
5	MM 105	Advanced CAD Lab	0	0	4	2
6	MM 106	Advanced Manufacturing Lab	0	0	4	2
7	MM 107	Research Methodology and IPR	2	0	0	2
8	MM 108	Writing Skills for Scientific Communication	2	0	0	0
Total						18

II SEMESTER

S.No	Course Code	Course Name	L	T	P	Credits
1	MM 201	Advanced Manufacturing Processes-II	3	0	0	3
2	MM 202	Computer Integrated Manufacturing	3	0	0	3
3	MM 203	Program Elective – 3	3	0	0	3
	MM 2031	Finite Element Methods				
	MM 2032	Concurrent Engineering				
	MM 2033	MEMS & Micro systems				
4	MM 204	Program Elective – 4	3	0	0	3
	MM 2041	Production and Operation Management				
	MM 2042	Advanced CNC Technologies				
	MM 2043	Supply Chain Management				
5	MM 205	Material Characterization Lab	0	0	4	2
6	MM 206	Simulation of Manufacturing Systems Lab	0	0	4	2
7	MM 207	Mini Project With Seminar	2	0	0	2
8	MM 208	Personality development through life Enlightenment skills	2	0	0	0
Total						18

*Students are encouraged to go to industrial training/internship for at least 2-3 months during semester break.

III SEMESTER

S.No	Course Code	Course Name	T	P	Credits
1	MM 301	Program Elective - 5	3	0	3
	MM 3011	Surface Integrity Processes			
	MM 3012	Signal Analysis and Condition Monitoring			
	MM 3013	Industrial Robotics			
	MM 3014	MOOCS/ NPTEL *			
2	MM 302	Open Elective	3	0	3
	MM 3021	Nano Technology			
	MM 3022	Advanced Materials and Processing			
	MM 3023	Intelligent Manufacturing Systems			
3		Project /Dissertation Phase-I	0	20	10
Total					16

*MOOCS/NPTEL Certification courses as per the approved list of internal BoS at the time of registration.

IV SEMESTER						
S.No	Course Code	Course Name	L	T	P	Credits
1		Project /Dissertation Phase-II	0	0	32	16
Total						16

Total Credits: 18+18+16+16 = 68


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KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF MECHANICAL ENGINEERING

**COURSE STRUCTURE M.Tech ME for
AUTOMOBILE ENGINEERING Programme**
(Applicable for batches admitted from 2019-2020)



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

I - SEMESTER

S.No	Code	Subject	L	T	P	Credits	
1	AE 101(Core-1)	Automotive Engineering	3	0	0	3	
2	AE102(Core-2)	Computational Fluid Dynamics	3	0	0	3	
3	Program Elective – I AE 103	AE	Combustion and Emissions Control	3	0	0	3
		AE	Analysis and Synthesis of Mechanisms				
		AE	Computer Aided Design				
		AE	Automotive Chassis Design				
4	Program Elective – II AE 104	AE	Automotive Electronics	3	0	0	3
		AE	Fluid Power Systems				
		AE	Design of Transmission Systems				
		AE	Automotive Aerodynamics				
		AE	Advanced I.C.Engine, Electric and Hybrid Vehicles				
5	AE 105	Computational Fluid Dynamics Lab	0	0	3	2	
6	AE 106	Thermal Engineering Lab	0	0	3	2	
7	AE 107	Research Methodology and IPR	2	0	0	2	
8	AE 108	Soft Skills	2	0	0	0	
Total						18	

II – SEMESTER

S. No	Code	Subject	L	T	P	Credits	
1	AE 201(Core-1)	Vehicle Body Engineering	3	0	0	3	
2	AE 202(Core-2)	Vehicle Dynamics	3	0	0	3	
3	Program Elective– III AE 203	AE 2031	Noise, Vibrations and Harshness	0	0	3	3
		AE 2032	Condition Monitoring				
		AE 2033	Automotive Air-Conditioning Systems				
		AE 2034	Automotive System Components Design				
4	Program Elective– IV AE 204	AE 2041	Advanced Metal Forming	0	0	3	3
		AE 2042	Automotive Safety and Maintenance				
		AE 2043	Advanced Finite Element Methods				
		AE 2044	Vehicle Control Systems				
		AE 2045	Simulation of Vehicle Systems				
5	AE 205	Modeling and Simulation Lab	0	0	3	2	
6	AE 206	Automotive Systems Lab	0	0	3	2	
7	AE 207	Mini Project with Seminar	2	0	0	2	
8	AE 208	Value Education	2	0	0	0	
Total						18	

III-SEMESTER

S. No	Subject	L	T	P	Credits			
1	Program Elective- V 301	AE 3011	Vehicle Testing and Instrumentation	(OR) MOOCS/ NPTEL certification courses	3	0	0	3
		AE 3012	Engine Management Systems					
		AE 3013	Design and Analysis of Experiments					
		AE 3014	Special Types of Vehicles					
		AE 3015	Composite Materials and Structures					
2	Open Elective AE 302	Students are advised to opt for an open elective course of their choice being offered by other Departments of the Institute (OR) MOOCS/NPTEL certification courses duly approved by the Department			3	0	0	3
3	AE 303	Dissertation phase -I			0	0	20	10
Total								16

IV-SEMESTER

S. No	Subject	L	T	P	Credits
1	Dissertation phase -II	0	0	32	16

Total Credits: 18+18+16+16 = 68


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KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF MECHANICAL ENGINEERING

**COURSE STRUCTURE M.Tech ME for
CAD/ CAM Programme**

(Applicable for batches admitted from 2019-2020)



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

I- SEMESTER

S.No	Course Code	Course Name	L	T	P	Credits
1	CA 101	Geometric Modeling	3	0	0	3
2	CA 102	Computer Aided Manufacturing	3	0	0	3
3	CA 103	Program Elective – 1	3	0	0	3
	CA 1031	Computational Methods in Engineering				
	CA 1032	Materials Technology				
	CA 1033	Mechanical Vibrations				
4	CA 104	Program Elective – 2	3	0	0	3
	CA 1041	Mechatronics				
	CA 1042	Industrial Robotics				
	CA 1043	Simulation of Manufacturing Systems				
5	CA 105	Advanced CAD Lab	0	0	4	2
6	CA 106	Advanced Manufacturing Lab	0	0	4	2
7	CA 107	Research Methodology and IPR	2	0	0	2
8	CA 108	Writing Skills for Scientific Communication	2	0	0	0
Total						18

II - SEMESTER

S.No	Course Code	Course Name	L	T	P	Credits
1	CA 201	Theory of Elasticity and Plasticity	3	0	0	3
2	CA 202	Advanced Manufacturing Processes	3	0	0	3
3	CA 203	Program Elective – 3	3	0	0	3
	CA 2031	Advanced Finite Element Methods				
	CA 2032	Fracture mechanics				
	CA 2033	Product Design and Development				
4	CA 204	Program Elective – 4	3	0	0	3
	CA 2041	Materials Characterization Techniques				
	CA 2042	Optimization & Reliability				
	CA 2043	Additive Manufacturing				
5	CA 205	Material Characterization Lab	0	0	4	2
6	CA 206	Simulation of Manufacturing Systems Lab	0	0	4	2
7	CA 207	Mini Project With Seminar	2	0	0	2
8	CA 208	Personality development through life enlightenment skills	2	0	0	0
Total						18

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III SEMESTER

III SEMESTER						
S.No	Course Code	Course Name	T	P	Credits	
1	CA 301	Program Elective - 5	3	0	3	
	CA 3011	Non destructive Evaluation				
	CA 3012	Quality engineering				
	CA 3013	Green Manufacturing				
	CA 3014	MOOCS/NPTEL *				
2	CA 302	Open Elective	3	0	3	
	CA 3021	Nano Technology				
	CA 3022	Optimization Techniques				
	CA 3023	Product Design and Manufacturing				
3		Project /Dissertation Phase-I	0	20	10	
			Total		16	

*MOOCS/NPTEL certification courses as per the approved list of internal BoS at the time of registration.

IV SEMESTER

IV SEMESTER						
S.No	Course Code	Course Name	L	T	P	Credits
1		Project /Dissertation Phase-II	0	0	32	16
					Total	16

Total Credits: 18+18+16+16 = 68


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DEPARTMENT OF MECHANICAL ENGINEERING

COURSE STRUCTURE M.Tech ME for
COMPUTER AIDED ANALYSIS & DESIGN
(Applicable for batches admitted from 2019-2020)



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

I-Semester

S.No	Course Code	Course Name	L	T	P	Credits
1	CA 101	Advanced Mechanics of Solids	3	0	0	3
2	CA 102	Finite Element Analysis	3	0	0	3
3	CA 103	Program Elective – 1	3	0	0	3
	CA 1031	1.Mechanical Vibrations				
	CA 1032	2.Experimental Stress Analysis				
	CA 1033	3.Product Design				
4	CA 104	Program Elective – 2	3	0	0	3
	CA 1041	1.Non Destructive Evaluation				
	CA 1042	2. Geometric Modelling				
	CA 1043	3. Computational Methods in Engineering				
5	CA 105	Machine Dynamics Lab	0	0	4	2
6	CA 106	Advanced CAD Lab	0	0	4	2
7	CA 107	Research Methodology and IPR	2	0	0	2
8	CA 108	Writing Skills for Scientific Communication	2	0	0	0
Total						18

II Semester						
S.No	Course Code	Course Name	L	T	P	Credits
1	CA 201	Optimization and Reliability	3	0	0	3
2	CA 202	Advanced Mechanisms	3	0	0	3
3	CA 203	Program Elective – 3	3	0	0	3
	CA 2031	1.Fracture Mechanics				
	CA 2032	2.Advanced Finite Element Methods				
	CA 2033	3.Design for Manufacturing				
4	CA 204	Program Elective – 4	3	0	0	3
	CA 2041	1.Industrial Robotics				
	CA 2042	2.Tribology in Design				
	CA 2043	3.Rapid Prototyping & Tool Design				
5	CA 205	Design Practice Lab	0	0	4	2
6	CA 206	Material Characterization Lab	0	0	4	2
7	CA 207	Mini Project With Seminar	2	0	0	2
8	CA 208	Personality Development Through Life Enlightenment Skills	2	0	0	0
Total						18

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III -SEMESTER

S.No	Course Code	Course Name	T	P	Credits
1	CA 301	Program Elective - 5	0	0	3
	CA 3011	Signal Analysis And Condition Monitoring			
	CA 3012	Computer Integrated Manufacturing			
	CA 3013	Mechanics of Composite Materials			
	CA 3014	MOOCS/NPTEL*			
2	CA 302	Open Elective	0	0	3
	CA 3021	Advanced Tool Design			
	CA 3022	Material Technology			
	CA 3023	Computational Fluid Dynamics			
3		Project /Dissertation Phase-I	0	20	10
Total					16
*MOOCS/NPTEL certification courses as per the approved list of internal BoS at the time of registration.					

IV-SEMESTER

S.No	Course Code	Course Name	L	T	P	Credits
1		Project /Dissertation Phase-II	0	0	32	16
Total						16

Total Credits: 18+18+16+16 = 68


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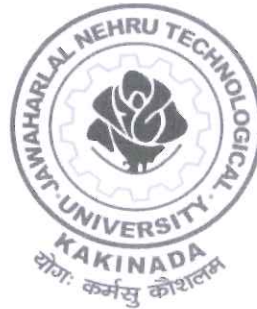
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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF MECHANICAL ENGINEERING

COURSE STRUCTURE M.Tech ME for
MACHINE DESIGN PROGRAMME
(Applicable for batches admitted from 2019-2020)



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

I – Semester

S.No.	Code	Subject	L	T	P	Credits	
1	MD101	Advanced Mechanics of Solids	3	0	0	3	
2	MD102	Mechanical Vibrations and Acoustics	3	0	0	3	
3	Programme Elective – I MD 103	MD1031	3	0	0	3	
		Design of Modern Vehicle Systems					
		MD 1032					Product Design
		MD 1033					Geometric Modeling
		MD 1034					Fracture Mechanics
MD 1035	Advanced Mechanisms						
4	Programme Elective –II MD 104	MD 1041	3	0	0	3	
		Non-Destructive Evaluation					
		MD 1042					Robotics
		MD 1043					Design for Manufacturing & Assembly
		MD 1044					Multi Body Dynamics
MD 1045	Vision Systems and Image Processing						
5	MD105	Machine Dynamics Lab	0	0	4	2	
6	MD106	Design Practice Lab-I	0	0	4	2	
7	MD107	Research Methodology and IPR	2	0	0	2	
8	MD108	Soft Skills	2	0	0	0	
Total						18	

II- Semester

S.No.	Code	Subject	L	T	P	Credits	
1	MD201	Advanced Finite Element Methods	3	0	0	3	
2	MD202	Advanced Machine Design	3	0	0	3	
3	Programme Elective – III MD 203	MD 2031	3	0	0	3	
		Theory of Plasticity					
		MD 2032					Signal Analysis and Condition Monitoring
		MD 2033					Computational Fluid Dynamics
		MD 2034					Composite Materials
MD 2035	Soft Computing						
4	Programme Elective – IV MD 204	MD 2041	3	0	0	3	
		Experimental Techniques and data analysis					
		MD 2042					Design with advanced Materials
		MD 2043					Mechatronics
		MD 2044					Tribology
MD 2045	Experimental Modal Analysis						
5	MD205	Computational Mathematics Lab	0	0	4	2	
6	MD206	Design Practice Lab-II	0	0	4	2	
7	MD207	Value Education	2	0	0	0	
8	MD208	Mini Project with Seminar	0	0	4	2	
Total						18	

III -Semester

S.No.	Code	Subject	L	T	P	Credits
1	Programme Elective – V* MD 301	MD 3011 Industrial Robotics	3	0	0	3
		MD 3012 Advanced Optimization Techniques				
		MD 3013 Additive Manufacturing				
		MD 3014 Mechanics of Composite Materials				
		MD 3015 Vehicle Dynamics				
2	Open Elective	Should register for courses offered by other departments	3	0	0	3
3	Dissertation	Dissertation Phase -I	0	0	20	10
Total						16

* Students going for Industrial Project/ Thesis will complete programme elective and open elective courses through MOOCs

IV- Semester

S.No.	Code	Subject	L	T	P	Credits
1	Dissertation	Dissertation Phase -II	0	0	32	16
Total						16

Courses offered by Mechanical Engineering Department to other departments as Open electives.

S.No.	Code	Subject	L	T	P	Credits
1	MD 3021	Industrial Robotics	3	0	0	3
2	MD 3022	Operations Research	3	0	0	3
3	MD 3023	Additive Manufacturing	3	0	0	3
4	MD 3024	Experimental Techniques and Data Analysis	3	0	0	3

Total Credits: 18+18+16+16 = 68


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KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF MECHANICAL ENGINEERING

COURSE STRUCTURE M.Tech ME for
MECHANICAL ENGINEERING DESIGN PROGRAMME
(Applicable for batches admitted from 2019-2020)



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

I - Semester

S.No.	Code	Subject	L	T	P	Credits
1	MD101	Advanced Mechanics of Solids	3	0	0	3
2	MD102	Mechanical Vibrations and Acoustics	3	0	0	3
3	Programme Elective – I	MD1031	3	0	0	3
		MD 1032				
	MD 1033	Product Design				
	MD 1034	Geometric Modeling				
	MD 1035	Fracture Mechanics				
MD 103	Advanced Mechanisms					
4	Programme Elective –II	MD 1041	3	0	0	3
		MD 1042				
	MD 1043	Robotics				
	MD 1044	Design for Manufacturing & Assembly				
	ME104	Multi Body Dynamics				
ME104	ME 1041	Reliability Engineering				
5	MD105	Machine Dynamics Lab	0	0	4	2
6	MD106	Design Practice Lab-I	0	0	4	2
7	MD107	Research Methodology and IPR	2	0	0	2
8	MD108	Soft Skills	2	0	0	0
Total						18

II- Semester

S.No.	Code	Subject	L	T	P	Credits
1	MD201	Advanced Finite Element Methods	3	0	0	3
2	MD202	Advanced Machine Design	3	0	0	3
3	Programme Elective – III	MD 2031	3	0	0	3
		MD 2032				
	MD 2033	Signal Analysis and Condition Monitoring				
	MD 2034	Computational Fluid Dynamics				
	ME203	Composite Materials				
ME203	ME 2031	Computer Aided Mechanical Design and Analysis				
4	Programme Elective – IV	MD 2041	3	0	0	3
		MD 2042				
	MD 2043	Design with Advanced Materials				
	MD 2044	Mechatronics				
	MD 2045	Tribology				
MD 204	Experimental Modal Analysis					
5	MD205	Computational Mathematics Lab	0	0	4	2
6	MD206	Design Practice Lab-II	0	0	4	2
7	MD207	Value Education	2	0	0	0
8	MD208	Mini Project with Seminar	0	0	4	2
Total						18

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III - Semester

S.No.	Code	Subject	L	T	P	Credits	
1	Programme Elective – V*	MD 3011	3	0	0	3	
		MD 3012					Industrial Robotics
		MD 3013					Advanced Optimization Techniques
	MD 301	MD 3014					Additive Manufacturing
	ME301	ME 3011					Mechanics of Composite Materials
		An Introduction to Nano Science and Technology					
2	Open Elective	Should register for courses offered by other departments	3	0	0	3	
3	Dissertation	Dissertation Phase -I	0	0	20	10	
Total						16	

* Students going for Industrial Project/ Thesis will complete programme elective and open elective courses through MOOCs

IV -Semester

S.No.	Code	Subject	L	T	P	Credits
1	Dissertation	Dissertation Phase -II	0	0	32	16
Total						16

Courses offered by Mechanical Engineering Department to other departments as Open electives.

S.No.	Code	Subject	L	T	P	Credits
1	MD 3021	Industrial Robotics	3	0	0	3
2	MD 3022	Operations Research	3	0	0	3
3	MD 3023	Additive Manufacturing	3	0	0	3
4	ME 3021	An Introduction to Nano Science and Technology	3	0	0	3

Total Credits: 18+18+16+16 = 68


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KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF MECHANICAL ENGINEERING

**COURSE STRUCTURE M.Tech ME for
MINING ENGINEERING PROGRAMME**
(Applicable for batches admitted from 2019-2020)



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

I-Semester

S.No	Code	Course Name	L	T	P	C	
1	MN 101	Advanced Rock Mechanics and Ground Control	3	0	--	3	
2	MN 102	Mine Planning and Design	3	0	--	3	
3	Program Elective – I MN 103	MN1031	3	0	--	3	
		MN1032					Ground Improvement Techniques
		MN1033					Tunneling and Underground Space Technology
4	Program Elective – II MN 104	MN1041	3	0	--	3	
		MN1042					Modern Surveying Techniques
		MN1043					Instrumentation In Mining
5	MN 105	Rock Mechanics Lab	-	--	4	2	
6	MN 106	Mine Planning and Design Lab	-	--	4	2	
7	MN 107	Research Methodology and IPR	2	0	0	2	
8	MN 108	Writing Skills for Scientific communication	2	0	0	0	
Total							18

II-Semester

S.No.	Code	Course Name	L	T	P	C	
1	MN 201	Mine Safety Management	3	0	--	3	
2	MN 202	Mine Ventilation and Planning	3	0	--	3	
3	Program Elective – III MN 203	MN 2031	3	0	--	3	
		MN 2032					Surface Mine Environmental Engineering
		MN 2033					Mine System Engineering
4	Program Elective – IV MN 204	MN 2041	3	0	--	3	
		MN 2042					Sustainable Mining Industry
		MN 2043					Geo- Statistics
5	MN 205	Advance Underground Mine Planning and Design					
6	MN 206	Numerical Methods in Geotechnical Engineering					
5	MN 205	Geotechnical Engineering Lab	--	--	4	2	
6	MN 206	Mine Ventilation and Planning Lab	--	--	4	2	
7	MN 207	Mini Project with Seminar	0	0	4	2	
8	MN 208	Value Education	2	0	0	0	
Total							18

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III-Semester

S.No	Code	Course Name	L	T	P	C	
1	MN 301	Program Elective /MOOCS	3	0	--	3	
		MN 3011					Introduction to Petroleum Engineering
		MN 3012					Computational Fluid Dynamics
		MN 3013					Finite Element Analysis
2	MN 302	Open Elective / MOOCS	3	0	--	3	
3	MN 303	Dissertation Phase-I / Industrial Project (To be continued and Evaluated next Semester)*	--	--	20	10	
Total						16	

* Evaluated and displayed in 4th Semester marks list

** Students Going for Industrial Project / Thesis will complete these courses through MOOCS

IV-Semester

S No.	Code	Course Name	L	T	P	C
1	MN 401	Dissertation Phase II (Continued from III Semester)	0	0	32	16
Total						16

Total Credits: 18+18+16+16 = 68


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DEPARTMENT OF MECHANICAL ENGINEERING

COURSE STRUCTURE M.Tech ME for
THERMAL SCIENCES AND ENERGY SYSTEMS PROGRAMME
(Applicable for batches admitted from 2019-2020)



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

I-SEMESTER

S.No	Code	Subject	L	T	P	Credits	
1	TES 101(Core-1)	Advanced Heat Transfer	3	0	0	3	
2	TES102(Core-2)	Computational Fluid Dynamics	3	0	0	3	
3	Program Elective – I TES 103	TES 1031	3	0	0	3	
		Advanced I.C engine ,Electric and Hybrid vehicles					
		TES 1032					Refrigeration and Cryogenics
		TES 1033					Thermal and Nuclear Power Plants
TES 1034	Advanced Thermodynamics						
4	Program Elective – II TES 104	TES 1041	3	0	0	3	
		Advanced Fluid Mechanics					
		TES 1042					Thermal Measurements and Process Controls
		TES 1043					Alternative Fuel Technologies
TES 1044	Gas Turbines and Jet Propulsion						
5	TES 105	Computational Fluid Dynamics Lab	0	0	3	2	
6	TES 106	Thermal Engineering Lab	0	0	3	2	
7	TES 107	Research Methodology and IPR	2	0	0	2	
8	TES 108	Soft Skills	2	0	0	0	
Total						18	

II -SEMESTER

S. No	Code	Subject	L	T	P	Credits	
1	TES 201(Core-1)	Solar Energy and Fuel Cell Technologies	3	0	0	3	
2	TES 202(Core-2)	Energy Conservation and Management	3	0	0	3	
3	Program Elective– III TES 203	TES 2031	0	0	3	3	
		Energy Systems Modeling and Analysis					
		TES 2032					Energy Economics and Planning
		TES 2033					Optimization Techniques and Applications
TES 2034	Biomass, Wind and Ocean Energy						
4	Program Elective– IV TES 204	TES 2041	0	0	3	3	
		Waste Heat Recovery Systems					
		TES 2042					Design of Heat Transfer Equipment
		TES 2043					Combustion, Emissions and Environment
TES 2044	Green Buildings						
5	TES 205	Modeling and Simulation lab	0	0	3	2	
6	TES 206	Energy Systems lab	0	0	3	2	
7	TES 207	Mini Project with Seminar	2	0	0	2	
8	TES 208	Value Education	2	0	0	0	
Total						18	

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III - SEMESTER

S. No	Subject	L	T	P	Credits			
1	Program Elective- V TES 301	TES 3011	Design and Analysis of Experiments	(OR) MOOCS/ NPTEL certification courses	3	0	0	3
		TES 3012	Convective Heat Transfer					
		TES 3013	Advanced Finite Element Methods					
		TES 3014	Materials and Devices for Energy Applications					
2	Open Elective TES 302	Students are advised to opt for an open elective course of their choice being offered by other Departments of the Institute (OR) MOOCS/NPTEL certification courses duly approved by the Department			3	0	0	3
3	TES 303	Dissertation phase -I			0	0	20	10
Total								16

IV - SEMESTER

S. No	Subject	L	T	P	Credits
1	Dissertation phase -II	0	0	32	16

Total Credits: 18+18+16+16 = 68

(Signature)

Director (Ac)
Academic Planning
JNTUK Kakinada



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF MECHANICAL ENGINEERING

COURSE STRUCTURE M.Tech ME for
THERMAL ENGINEERING PROGRAMME
(Applicable for batches admitted from 2019-2020)



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

I -SEMESTER

S.No	Code	Subject	L	T	P	Credits	
1	TE 101(Core-1)	Advanced Fluid Mechanics	3	0	0	3	
2	TE102(Core-2)	Computational Fluid Dynamics	3	0	0	3	
3	Program Elective – I TE 103	TE 1031	3	0	0	3	
		Advanced I.C engine ,Electric and Hybrid vehicles					
		TE 1032					Gas Dynamics
		TE 1033					Cryogenic Engineering
TE 1034	Advanced Thermodynamics						
4	Program Elective – II TE 104	TE 1041	3	0	0	3	
		Gas Turbines					
		TE 1042					Alternative Fuel Technologies
		TE 1043					Energy Conservation and Management
TE 1044	Theory and Technology of Fuel Cells						
5	TE 105	Computational Fluid Dynamics Lab –I	0	0	3	2	
6	TE 106	Thermal Engineering Lab-I	0	0	3	2	
7	TE 107	Research Methodology And IPR	2	0	0	2	
8	TE 108	Soft Skills	2	0	0	0	
Total						18	

II -SEMESTER

S. No	Code	Subject	L	T	P	Credits	
1	TE 201(Core-1)	Advanced Heat Transfer	3	0	0	3	
2	TE 202(Core-2)	Thermal Measurements and Process Controls	3	0	0	3	
3	Program Elective– III TE 203	TE 2031	0	0	3	3	
		Equipment Design for Thermal Systems					
		TE 2032					Solar Energy Technologies
		TE 2033					Advanced Power Plant Engineering
TE 2034	Combustion, Emissions and Environment						
4	Program Elective– IV TE 204	TE 2041	0	0	3	3	
		Jet Propulsion and Rocket Engineering					
		TE 2042					Automotive Engineering
		TE 2043					Modeling of I.C engines
TE 2044	Renewable Energy Technologies						
5	TE 205	Computational Fluid Dynamics Lab–II	0	0	3	2	
6	TE 206	Thermal Engineering Lab-II	0	0	3	2	
7	TE 207	Mini Project with Seminar	2	0	0	2	
8	TE 208	Value Education	2	0	0	0	
Total						18	

III- SEMESTER

S. No		Subject	L	T	P	Credits		
1	Program Elective- V 301	TE 3011	Optimization Techniques and Applications	(OR) MOOCS/ NPTEL certification courses	3	0	0	3
		TE 3012	Design and Analysis of Experiments					
		TE 3013	Convective Heat Transfer					
		TE 3014	Waste to Energy					
		TE 3015	Advanced finite element methods					
2	Open Elective TE 302	Students are advised to opt for an open elective course of their choice being offered by other Departments of the Institute (OR) MOOCS/NPTEL certification courses duly approved by the Department	3	0	0	3		
3	TE 303	Dissertation phase -I	0	0	20	10		
Total							16	

IV -SEMESTER

S. No	Subject	L	T	P	Credits
1	Dissertation phase -II	0	0	32	16

Total Credits: 18+18+16+16 = 68


 Director (i/c)
 Academic Planning
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