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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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
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**

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

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**

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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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	Design of Modern Vehicle Systems	3	0	0	3
		MD 1032	Product Design				
		MD 1033	Geometric Modeling				
		MD 1034	Fracture Mechanics				
		MD 1035	Advanced Mechanisms				
4	Programme Elective –II MD 104	MD 1041	Non-Destructive Evaluation	3	0	0	3
		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	Theory of Plasticity	3	0	0	3
		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	Experimental Techniques and data analysis	3	0	0	3
		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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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
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 MD 103	MD1031	Design of Modern Vehicle Systems	3	0	0	3
		MD 1032	Product Design				
		MD 1033	Geometric Modeling				
		MD 1034	Fracture Mechanics				
		MD 1035	Advanced Mechanisms				
4	Programme Elective –II MD 104	MD 1041	Non-Destructive Evaluation	3	0	0	3
		MD 1042	Robotics				
		MD 1043	Design for Manufacturing & Assembly				
		MD 1044	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 203	MD 2031	Theory of Plasticity	3	0	0	3
		MD 2032	Signal Analysis and Condition Monitoring				
		MD 2033	Computational Fluid Dynamics				
		MD 2034	Composite Materials				
	ME203	ME 2031	Computer Aided Mechanical Design and Analysis				
4	Programme Elective – IV MD 204	MD 2041	Experimental Techniques and data analysis	3	0	0	3
		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 3011	Industrial Robotics	3	0	0	3
		MD 3012	Advanced Optimization Techniques				
		MD 3013	Additive Manufacturing				
	MD 301	MD 3014	Mechanics of Composite Materials				
	ME301	ME 3011	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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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA

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	Ground Improvement Techniques	3	0	--	3
		MN1032	Tunneling and Underground Space Technology				
		MN1033	Modern Surveying Techniques				
4	Program Elective – II MN 104	MN1041	Instrumentation In Mining	3	0	--	3
		MN1042	Introduction to Robotics and Application to Mining				
		MN1043	Remote Sensing & Geographical Information Systems				
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	Surface Mine Environmental Engineering	3	0	--	3
		MN 2032	Mine System Engineering				
		MN 2033	Sustainable Mining Industry				
4	Program Elective – IV MN 204	MN 2041	Geo- Statistics	3	0	--	3
		MN 2042	Advance Underground Mine Planning and Design				
		MN 2043	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

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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KAKINADA – 533 003, Andhra Pradesh, India

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	Advanced I.C engine ,Electric and Hybrid vehicles	3	0	0	3
		TES 1032	Refrigeration and Cryogenics				
		TES 1033	Thermal and Nuclear Power Plants				
		TES 1034	Advanced Thermodynamics				
4	Program Elective – II TES 104	TES 1041	Advanced Fluid Mechanics	3	0	0	3
		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	Energy Systems Modeling and Analysis	0	0	3	3
		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	Waste Heat Recovery Systems	0	0	3	3
		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**

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 - SEMESTESR

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

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

Director (Ve)
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	Advanced I.C engine ,Electric and Hybrid vehicles	3	0	0	3
		TE 1032	Gas Dynamics				
		TE 1033	Cryogenic Engineering				
		TE 1034	Advanced Thermodynamics				
4	Program Elective – II TE 104	TE 1041	Gas Turbines	3	0	0	3
		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	Equipment Design for Thermal Systems	0	0	3	3
		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	Jet Propulsion and Rocket Engineering	0	0	3	3
		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

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