

SWVSM'S

Tatyasaheb Kore Institute of Engineering and Technology, Warananagar An Autonomous Institute

Abbreviations

Sr.No.	Acronym	Definition
1	ISE	In-SemesterExamination
2	ISE-I	In-SemesterExamination-I
3	ISE-II	In-SemesterExamination-II
4	ESE	EndSemesterExamination
5	ISA	In-Semester Assessment (Term Work)
6	L	Lecture
7	Т	Tutorial
8	P	Practical
9	СН	Contact Hours
10	C	Credit

Course/ Subject Categories

Sr. No.	Acronym	Definition
1	BSC	Basic Science Course
2	ESC	Engineering Science Course
3	PCC	Professional Core Course
4	OE	Open Elective
5	MDM	Multidisciplinary Minor
6	PEC	Professional Elective Course
7	EEC	Entrepreneurship/Economics/ Management Courses
8	VEC	Value Education Course
9	ELC	Experiential Learning Courses
10	VSEC	Vocational and Skill Enhancement Course
11	AEC	Ability Enhancement Course
12	HSSM	Humanities Social Science and Management

OF MECH. ENGLINE PHING Warananagar, Warananagar, 416 113 4 115 - Parananagar

SWVSM'S

Tatyasaheb Kore Institute of Engineering and Technology, Warananagar An Autonomous Institute

Course/ Subject Categories

Year of Implementation	UG/PG	Subject Category	Branch	Sem	Course Number
24	UG	PCC	ME	3	01

Course Term work and POE Code

Year of Implementation	UG/PG	Subject Category	Branch Code	Sem	Course Number	T- Term work P- POE A- Audit Course
24	UG	PCC	ME	3	01	T/P/A



SWVSM'S

Tatyasaheb Kore Institute of Engineering and Technology, Warananagar An Autonomous Institute

(National Education Policy (NEP) 2020 Structure)

Vision

To be a leading Mechanical Engineering department recognized for fostering innovation, academic excellence, and ethical professionalism, contributing significantly to industry advancements and societal welfare.

MISSION STATEMENTS

- M1 Provide a dynamic learning environment that cultivates technical proficiency,
 critical thinking, and problem-solving skills among students.
- M2 Foster collaboration with industries to ensure curriculum relevance, facilitate internships, and promote entrepreneurial initiatives.
- M3 Promote a culture of research and innovation, encouraging faculty and students to engage in impactful projects addressing contemporary challenges.
- M4 Prioritize inclusivity by providing equal educational opportunities to all students, especially those from rural and underprivileged backgrounds.
- M5 Instill a commitment to lifelong learning, ethical values, and social responsibility, preparing graduates to make meaningful contributions to society and the environment.

Second Year B. Tech. In Mechanical Engineering

National Education Policy (NEP) 2020 Structure



Semester-III

(National Education Policy (NEP) 2020 Structure) Credit Scheme

(To be implemented from 2024 - 25)

Sr.	Category Sub Course Code Name of Course								ne	Examination	n & Evalu	ation Sc	heme
No ·	Category	Category	Course Code	Name of Course	L	Т	Р	С	СН	Component	Mark s		for
			23UGPCC-ME301	Mathematics for Mechanical	3	_		2	3	ESE	60	24	40
		4 4 9 6 1		Engineering						ISE	40	16	
1			23UGPCC-ME302	Applied Thermodynamics	3			2	3	ESE	60	24	40
1	Programme Course	PCC		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						ISE	40 60	16	
			23UGPCC-ME303	Fluid Mechanics	3	-	-	3	3	ESE	40	16	40
				Barrer of the second								10.00	
			23UGPCC-ME304	Material Science and Metallurgy	3			2	3	ESE	60	24	40
										ISE	40	16	
		EEC	23UGEEC-ME305	Fundamentals of Engineering	3			2	3	ESE	60	24	40
91	Humanities			Economics						ISE	40	16	
2	Social Science and Management	VEC	23UGVEC-ME306L	Personal Values and Ethics	2	-	-	2	2	ISA	50	20	20
3	Multidisciplinary Courses	MDM-1	23UGMDM1- ME307L	Multidisciplinary Minor-1 (Specify MDM Basket)	2	-		2	2	ISA	50	20	20
4	Experiential Learning Courses	CEP	23UGCEP-ME308L	Community Connected Project	-		2	2	2	ISA	50	20	20
			23UGPCC-ME302L	Applied Thermodynamics Lab		-	2	1	2	ISA	25	10	10
			23UGPCC-	Fluid Mechanics				-	_	ISA	25	10	00
	Programme		ME303LP	Lab	-		2	1	2	POE	25	10	20
5	Course	Course 331/GPCC Mai	Material Science	3			4		ISA	25	10	20	
			ME304LP	and Metallurgy Lab			2	1	2	POE	25	10	1
			23UGPCC-ME309L	Machine Drawing & Geometric Modeling Lab		-	2	1	2	ISA	25	10	10
1990	THE STATE OF THE S		O THE DEVIL SHIP DIE		19	0	10	21	29	0	800	320	32



Semester-IV (National Education Policy (NEP) 2020 Structure) <u>Credit Scheme</u> (To be implemented from 2024 - 25)

Sr.		Sub	Communication	N		Teach	ning S	chem	•	Exami	nation & E Scheme		on			
No.	Category	Category	Course Code	Name of Course	L	Т	Р	С	СН	Compon	Marks		for			
			23UGPCC-ME401	Analysis of Mechanical	3	_	_	2	3	ESE	60	24	40			
			230GPCC-INE401	Elements	3	-		2	3	ISE	40	16	40			
1	Programme	PCC	23UGPCC-ME402	Theory of Machines-I	3	_		2	3	ESE	60	24	40			
	Course		20001001112102	Thistory of Machinist I	ă					ISE	40	16				
			23UGPCC-ME403	Manufacturing Processes and	3			2	3	ESE	60	24	40			
				Machine Tools				(,,=)		ISE	40	16	3 61			
2	Humanities Social Science and	EEC	23UGEEC-ME404	Entrepreneurship/Econ omics/ Management Courses (EEC)	3	-	-	2	3	ESE	60	24	40			
	Management			(Specify OE Basket)						ISE	40	16				
		OE	23UGOE1-ME405	Open Elective (OE-1)	3	_		3	3	ESE	60	24	40			
3	Multidisciplinar v	OE	230GOE1-INE403	(Specify OE Basket)	3			3	3	ISE	40	16	40			
	Courses	MDM-2	23UGMDM2- ME406L	Multidisciplinary Minor-2	2	-		2	2	ISA	50	20	20			
4	Skill Courses	VSEC	23UGVSEC- ME407L	C++ Programming Lab		-	2	1	2	ISA	50	20	20			
5	Humanities Social Science	AEC	23UGAEC-ME408L	Modern Indian language (Specify MIL Basket)	2	-		2	2	ISA	25	10	10			
,	and Management	VEC	23UGVEC-ME409L	Environment Ethics and Sustainability	2			2	2	ISA	50	20	20			
			23UGPCC-ME401L	Analysis of Mechanical Elements Lab	-		2	1	2	ISA	25	10	10			
			23UGPCC-	Theory of Machines-I		_	2	1	_	ISA	25	10	20			
6	Programme Course	Programme Course	Programme Course	Programme Course	PCC	ME402LP	Lab	0770					POE	25	10	20
		23UGPCC- Manufacturing Pro	Manufacturing Process			2	1		ISA	25	10	20				
			ME410LP	Lab			_			POE	25	10				
					21	0	8	21	29	0	800	320	320			



Semester-III &IV

(National Education Policy (NEP) 2020 Structure)

Credit Scheme

(To be implemented from 2024 - 25)

Engineering Economics / Entrepreneurship Course (EEC) and Modern Indian Language (MIL) Basket

	Engi	neering Economics Co	urse Basket SemIII
Category	Sub Category	Course Code	Name of Course
		23UGEEC-ME3051	Economic Analysis of Engineering Projects
Humanities Social Science and Management	EEC - 1	23UGEEC-ME3052	Fundamentals of Engineering Economics
and Management		23UGEEC-ME3053	Engineering Economics for Mechanical Engineers

			MARKET DE ROSSE LA LOS COMOS DE ROSSE DE ROSSE DE LOS DELOS DE LOS DE LOS DE LOS DE LOS DE LOS DE LOS DELOS DE LOS DE LOS DELOS DE LOS DELOS DE LOS DELOS DEL
Category	Sub Category	Course Code	Name of Course
		23UGEEC-ME4041	Industrial Management and Operation Research
Humanities Social Science and Management	EEC -2	23UGEEC-ME4042	Intellectual Property Rights and Patents
and Management		23UGEEC-ME4043	Start up Management

		Modern Indian L	anguage
Category	Sub Category	Course Code	Name of Course
Humanities	HE 2	23UGAEC-ME4081L	Kanada
Social Science	AEC	23UGAEC-ME4082L	Marathi
and Management		23UGAEC-ME4083L	Hindi



Semester-IV

(National Education Policy (NEP) 2020 Structure) Credit Scheme

(To be implemented from 2024 - 25)

Open Electives Basket Offered

Sr.	Sem.	Category	Course	Name of Course	Т	each	ing	Sche	eme	Examination & Evaluation Scheme					
No.	Jeili.	Category	Code	Name of Course	L	Т	Р	С	СН	Component	Marks	Min for	Passing		
	D/	05.4	22UCOE4 ME4054	Machining Processes (Including					HE782	3	,	ESE	60	24	40
	IV	OE-1	23UGOE1-ME4051	CNC)	3			3	3	ISE	40	16	40		
										ESE	60	24			
2	IV	OE-1	23UGOE1-ME4052	Renewable Energy Systems	3	-	-	3	3	ISE	40	16	40		
					6	0	_	6	6		200	80	80		

Exit Option to Qualify Diploma completion of S. Y. B. Tech.

Sr.		Sub Course		Т	each	ning S	Sche	me	LITTATE CONTROL OF THE CONTROL OF TH	ISA 50 20			
No.	Category	Category	Code	Name of Course	L	Т	Р	С	СН	Component	Marks		for
1	Skill Courses	VSEC	23UGVSEC-ME411L	CNC Programming	2	-	2	3	4	ISA	50	20	20
2	Experiential	ELC	23UGELC-ME412L	Mini Project	2		2	3	4	ISA	50	20	20
3	Learning Courses	ELC	23UGELC-ME413L	Internship (2 Weeks)	-	-	6	2	6	ISA	50	20	20
					4	0	10	8	14	0	150	60	60



Third Year B. Tech. In Mechanical Engineering

National Education Policy (NEP) 2020 Structure



Semester-V (National Education Policy (NEP) 2020 Structure) Credit Scheme

(To be implemented from 2025 - 26)

		Sub			т	each	ing S	chem	ie	Exami	nation & E Schem		on
Sr. No.	Category	Category	Course Code	Name of Course	L	т	Р	С	C	Compo	Marks	Min Pass	for sing
		PCC	23UGPCC-ME501	Theory of Machine- II	3		-	3	3	ESE	60	24	40
								1000		ISE ESE	40 60	16	
	Programme	PCC	23UGPCC-ME502	Heat and Mass Transfer	3	-		3	3	ISE	40	16	40
1	Course	POC	23UGPCC-ME503	Design of Machine	3			2	3	ESE	60	24	40
		PCC	230GPCC-IVIE303	Elements-I		*		~		ISE	40	16	
		PEC-1	23UGPEC1-ME504	Professional Elective Course-1 (Specify PEC-1	3	-		2	3	ESE	60	24	40
		120		Basket)						ISE			
		MDM-3	23UGMDM3-	Multidisciplinary Minor-3	3		2	4	5	ESE	E 60 24 E 40 16 E 60 24 E 40 16	40	
•	Multidisciplinar y	IVIDIVI-3	ME505	Matadoopmary material		-				ISE	40	16	
2	Courses	05.0	23UGOE2-ME506	Open Elective (OE) -2	3	-	_	3	3	ESE	60	24	40
		OE-2	230G0E2-ME506	(Specify OE-2 Basket)	J	•				ISE	40	16	
				The second Markins III oh			2	1	2	ISA	25	10	20
		PCC	23UGPCC-ME50LP	Theory of Machine- II Lab	-	-	2	'	-	POE	25	10	
			23UGPCC-	Heat and Mass Transfer Lab			2	1	2	ISA	25	10	20
3	Programme Course	PCC	ME502LP	Heat and Mass Transfer Lab		(*)			-	POE	25	10	
		PCC	23UGPCC-ME503L	Design of Machine Elements-I Lab			2	1	2	ISA	25	10	10
		23UGPCC- CNC & CMM Lab			2	1	2	ISA	25	10	3		
	PCC ME507LP CNC & CMM Lab					Ľ		POE	50	20			
1324		Mark Mark	No. 1		18	0	10	21	28	0	800	320	32

Program Electives Courses (PEC) Basket

PEC - 1										
Category	Sub Category	Course Code	Name of Course							
		23UGPEC1-ME5041	Manufacturing Engineering							
Programme Course	PEC-1	23UGPEC1-ME5042	Computer Integrated Manufacturing							
		23UGPEC1-ME5043	Additives Manufacturing							

Semester-V (National Education Policy (NEP) 2020 Structure) <u>Credit Scheme</u> (To be implemented from 2024 - 25)

Open Electives Basket Offered

Sr.	S	0	Course	Name of Course		Teach	ing S	Schen	ne	Examinat	ion & Eva	luation Sc	heme
No.	Sem	Category Code Name of Course		L	т	P	С	СН	Component	Marks	Min for	Passing	
		-		Product design and				3		ESE	60	24	40
1	V	OE-2	23UGOE2-ME5061	development	2	-	2	3	4	ISE	40	16	40
										ESE	60	24	40
2	V	OE-2	23UGOE2-ME5062	Hybrid and Electric Vehicles	2	-	2	3	4	ISE	40	16	40
	7				4	0	4	6	8		200	80	80



Semester-VI (National Education Policy (NEP) 2020 Structure) <u>Credit Scheme</u> (To be implemented from 2025 - 26)

Sr.		Sub			Т	each	ing S	Schen	ne	Examinat	ion & Eva Scheme	aluatio	n
No ·	Category	Category	Course Code	Name of Course	L	Т	Р	С	СН	Component	Marks		for
			20110200 112001	Metrology and Quality	_			_		ESE	60	24	40
			23UGPCC-ME601	control	3			2	3	ISE	40	16	40
		PCC	23UGPCC-ME602	Fluid and Turbo Machinery	3		_	2	3	ESE	60	24	40
		PCC	230GPCC-INIE602	Fluid and Turbo Machinery	3		_	2	3	ISE	40	16	40
	Programme		23UGPCC-ME603	Design of Machine	3	_	_	2	3	ESE	60	24	40
1	Course		23UGPCC-IVIE6U3	Elements-II	3	-	-	2	3	ISE	40	16	40
		DEO 0	221100502 M5604	Professional Elective	2	1		3	3	ESE	60	24	40
		PEC-2	23UGPEC2-ME604	Course-2 (Specify PEC-2 Basket)	2		-	3	3	ISE	40	16	40
		DEC 3	221100502 M5005	Professional Elective	3			3	3	ESE	60	24	40
		PEC-3	23UGPEC3-ME605	Course-3 (Specify PEC-3 Basket)	3		-	3	3	ISE	40	16	40
2	Multidisciplinary Courses	MDM-4	23UGMDM4- ME606L	Multidisciplinary Minor-4	2		-	2	2	ISA	50	20	20
3	Skill Courses	VSEC	23UGVSEC- ME607L	Computational Techniques and Programming	2	1		2	3	ISA	25	10	10
		N. MI	23UGPCC-	Metrology and Quality			1211			ISA	25	10	
			ME601LP	control Lab			2	1	2	POE	25	10	20
			23UGPCC-ME602L	Fluid and Turbo Machinery Lab	-	-	2	1	2	ISA	25	10	10
	Programme	PCC	23UGPCC-	Design of Machine			1 220	83		ISA	25	10	
4	Course		ME603LP	Elements-II Lab		-	2	1	2	POE	25	10	20
			23UGPCC-ME608L	Additive Manufacturing Lab (3D Printing)	-	-	2	1	2	ISA	50	20	20
			23UGPEC3-	Professional Elective				7/2		ISA	25	10	
		PEC-3	ME605LP	Course-3 (Specify PEC-3 Basket)			2	1	2	POE	25	10	20
		Telepis (18	2	10	21	30	0	800	320	32



Semester-VI

(National Education Policy (NEP) 2020 Structure)

<u>Credit Scheme</u>

(To be implemented from 2025 - 26)

Program Electives Courses (PEC) Basket

		PEC -	-2
Category	Sub Category	Course Code	Name of Course
	Barrier E.	23UGPEC2-ME6041	Industrial Fluid Power
Programme Course	PEC-2	23UGPEC2-ME6042	Advanced Manufacturing Technology
		23UGPEC2-ME6043	Additives Manufacturing

		PEC -	-3
Category	Sub Category	Course Code	Name of Course
		23UGPEC3-ME6051	Internal Combustion Engine
Programme Course	PEC-3	23UGPEC3-ME6052	Tribology
		23UGPEC3-ME6053	Piping Design

Exit Option to Qualify B. Tech. Vocational completion of T. Y. B. Tech

Sr.		Sub	Course		Т	each	ing S	che	ne		on & Eva	& Evaluation eme	
No.	Category	Category	Code	Name of Course	L	Т	P			Component	Marks		for sing
1	Skill Courses	VSEC	23UGVSEC-ME609L	Piping Design	2		2	3	4	ISA	50	20	20
2	Experiential	ELC	23UGELC-ME610L	Mini Project	1		4	3	5	ISA	50	20	20
3	Learning - Courses	ELC	23UGELC-ME611L	Industrial Internship (2 Weeks)	-	_	6	2	6	ISA	50	20	20
					3	0	12	8	15	0	150	60	60



Final Year B. Tech. In Mechanical Engineering

National Education Policy (NEP) 2020 Structure



Semester-VII

(National Education Policy (NEP) 2020 Structure)

Credit Scheme

(To be implemented from 2026 - 27)

		Sub			Т	each	ing S	chen	ne	Examinat	ion & Eva Scheme	luation	1
Sr. No.	Category	Category	Course Code	Name of Course	L	т	Р	С	СН	Component	Marks	Min Pass	A. C. A. C. C.
				Refrigeration and Air					•	ESE	60	24	40
		PCC	23UGPCC-ME701	Conditioning	3		-	2	3	ISE	40	16	40
					•			2	3	ESE	60	24	40
	Programme	PCC	23UGPCC-ME702	Mechanical System Design	3	-		2	3	ISE	40	16	40
1	Course			Professional Elective	•			2	2	ESE	60	24	40
		PEC-4	23UGPEC4-ME703	Course-4 (Specify PEC-4 Basket)	2	-	-	2	2	ISE	40	16	40
				Professional Elective	2			2	3	ESE	60	24	40
		PEC-5	23UGPEC5-ME704	Course-5 (Specify PEC-5 Basket)	3			2	3	ISE	40	16	40
	Experiential							•	,	ESE	60	24	40
2	Learning Courses	ELC	23UGELC-ME705	Research Methodology	2	1	-	3	3	ISE	40	16	40
3	Multidisciplinary Courses	MDM-5	23UGMDM5-ME706L	Multidisciplinary Minor-5	2	-		2	2	ISA	50	20	20
				Refrigeration and Air			,		,	ISA	25	10	20
		PCC	23UGPCC-ME701LP	Conditioning Lab	-	-	2	1	2	POE	25	10	20
				Mechanical System Design			_			ISA	25	10	20
4	Programme	PCC	23UGPCC-ME 702LP	Lab			2	1	2	POE	25	10	20
4	Course	PEC-4	23UGPEC4-ME703L	Professional Elective Course-4 (Specify PEC-4 Basket)	-	-	2	1	2	ISA	25	10	10
		PEC-5	23UGPEC5-ME704L	Professional Elective Course-5 (Specify PEC-5 Basket)	-		2	1	2	ISA	25	10	1
	Experiential		2011051 0 1457071 2	Design Dhage			4	4	4	ISA	50	20	4
5	Learning Courses	ELC	23UGELC-ME707LP	Project Phase - I	-		-	7	-	POE	50	20	
					15	1	12	21	28	0	800	320	32



Semester-VII
(National Education Policy (NEP) 2020 Structure)

<u>Credit Scheme</u>
(To be implemented from 2026 - 27)

Program Electives Courses (PEC) Basket

PEC - 4									
Category	Sub Category	Course Code	Name of Course						
		23UGPEC4-ME7031	Industrial Instrumentation and Control						
Programme Course	PEC-4	23UGPEC4-ME7032	Modeling and Simulation of Manufacturing Systems						
		23UGPEC4-ME7033	Power and Energy Engineering						

PEC -5										
Category	Sub Category	Course Code	Name of Course							
		23UGPEC5-ME7041	Mechatronics							
Programme Course	PEC - 5	23UGPEC5-ME7042	Automobile and Electric Vehicles Engineering							
		23UGPEC5-ME7043	Total Quality Management							



Semester-VIII

(National Education Policy (NEP) 2020 Structure)

Credit Scheme

(To be implemented from 2026 - 27)

Sr.		Sub			т	each	ing S	Schen	ne	Examinat	ion & Eva Scheme	aluatio	n
No.	Category	Category	Course Code	Name of Course	L	т	Р	С	СН	Component	Marks	Min Pass	for
								•	-	ESE	60	24	40
		PCC	23UGPCC-ME801	Finite Element Analysis	3	-	-	3	3	ISE	40	16	40
	Programme						10,11	•	,	ESE	60	24	40
1	Course	PCC	23UGPCC-ME802	Noise and Vibration	3	-	-	2	3	ISE	40	16	40
				Professional Elective				_	_	ESE	60	24	40
		PEC-6	23UGPEC6-ME803	Course-6 (Specify PEC-6 Basket)	2	-	-	2	2	ISE	40	16	40
2	Multidisciplinary Courses	MDM-6	23UGMDM6-ME804L	Multidisciplinary Minor-6	2			2	2	ISA	50	20	20
	Experiential									ISA	100	40	80
3	Learning Courses	ELC	23UGELC-ME805LP	Industrial Internship		-	8	8	8	POE	100	40	80
	Posterior	PCC	23UGPCC-ME801L	Finite Element Analysis Lab	-		2	1	2	ISA	25	10	10
4	Programme Course				K					ISA	25	10	20
		PCC	23UGPCC-ME802LP	Noise and Vibration Lab	-		2	1	2	POE	25	10	20
	Experiential						2	2	2	ISA	100	40	40
5	Learning Courses	ELC	23UGELC-ME806LP	Project Phase -II	-	-	2	2	2	POE	75	30	30
5.00					10	0	14	21	24	0	800	320	320

Program Electives Courses (PEC) Basket

PEC - 6									
Category	Sub Category	Course Code	Name of Course						
		23UGPEC6-ME8031	Industrial Engineering						
Programme	PEC-6	23UGPEC6-ME8032	Product Design and Development						
Course		23UGPEC6-ME8033	Cryogenics						

