SDM COLLEGE OF ENGINEERING AND TECHNOLOGY, DHARWAD

Department of Mechanical Engineering

I Semester B.E.

Physics cycle

Course Code	Course Category	Course Title	Teaching		Examination				
			L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
					Max. Marks	*Max. Marks	Duration in Hrs.	Max. Marks	Duration In Hrs.
18UMAC100	BS	Engineering Mathematics-I	3 - 1 - 0	4	50	100	3	-	-
18UPHC100	BS	Engineering Physics	3 - 1 - 0	4	50	100	3	-	-
18UEEC100	ES	Basic Electrical Engineering	3 - 0 - 0	3	50	100	3	-	-
18UCVC100	ES	Engineering Mechanics	3 - 0 - 0	3	50	100	3	-	-
18UMEC100	ES	Elements of Mechanical Engineering	2 - 0 - 0	2	50	50	2	-	-
18UPHL100	BS	Engineering Physics Lab	0 - 0 - 2	1	50	--	--	50	3
18UESL100	ES	Basic Engineering Skills Lab	0 - 0 - 2	1	50	--	--	50	3
18UHUC100	HU	Kannada	2- 0 -0	1	50	50	2		
18UHUA100	HU	Constitution of India & Professional Ethics	2- 0 - 0	Audit	100	--	--	--	--
Total			**18 - 2 -4**	**19**	**500**	**500**		**100**	

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Chemistry cycle

Course Code	Course Category	Course Title	Teaching		Examination				
			L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
					Max. Marks	*Max. Marks	Duration in Hrs.	Max. Marks	Duration In Hrs.
18UMAC100	BS	Engineering Mathematics-I	3 - 1 - 0	4	50	100	3	-	-
18UCYC100	BS	Engineering Chemistry	3 - 1 - 0	4	50	100	3	-	-
18UECC100	ES	Basic Electronics	3 - 0 - 0	3	50	100	3	-	-
18UCSC100	ES	Problem Solving & Programming in C	4 - 0 - 0	4	50	100	3	-	-
18UMGC100	ES	Engineering Graphics	2 - 0 - 2	3	50	100	3	-	-
18UCYL100	BS	Engineering Chemistry Lab	0 - 0 - 2	1	50	--	--	50	3
18UCSL100	ES	Problem Solving & Programming in C Lab	0 - 0 - 2	1	50	--	--	50	3
18UHUC101	HU	Functional English	2 - 0 -0	1	50	50	2	--	--
18UHUA102	HU	Environmental Science	2 - 0 - 0	Audit	100	--	--	--	--
Total			**19 - 2 - 6**	**21**	**500**	**550**		**100**	

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II Semester B.E.

Physics cycle

Course Code	Course Category	Course Title	Teaching		Examination				
			L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
					Max. Marks	*Max. Marks	Duration in Hrs.	Max. Marks	Duration In Hrs.
18UMAC200	BS	Engineering Mathematics-II	3 - 1 - 0	4	50	100	3	-	-
18UPHC200	BS	Engineering Physics	3 - 1 - 0	4	50	100	3	-	-
18UEEC200	ES	Basic Electrical Engineering	3 - 0 - 0	3	50	100	3	-	-
18UCVC200	ES	Engineering Mechanics	3 - 0 - 0	3	50	100	3	-	-
18UMEC200	ES	Elements of Mechanical Engineering	2 - 0 - 0	2	50	50	2	-	-
18UPHL200	BS	Engineering Physics Lab	0 - 0 - 2	1	50	--	--	50	3
18UESL200	ES	Basic Engineering Skills Lab	0 - 0 - 2	1	50	--	--	50	3
18UHUC200	HU	Kannada	2- 0 -0	1	50	50	2		
18UHUA200	HU	Constitution of India & Professional Ethics	2- 0 - 0	Audit	100	--	--	--	--
Total			**18 - 2 -4**	**19**	**500**	**500**		**100**	

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Chemistry cycle

Course Code	Course Category	Course Title	Teaching		Examination				
			L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
					Max. Marks	*Max. Marks	Duration in Hrs.	Max. Marks	Duration In Hrs.
18UMAC200	BS	Engineering Mathematics-II	3 - 1 - 0	4	50	100	3	-	-
18UCYC200	BS	Engineering Chemistry	3 - 1 - 0	4	50	100	3	-	-
18UECC200	ES	Basic Electronics	3 - 0 - 0	3	50	100	3	-	-
18UCSC200	ES	Problem Solving & Programming in C	4 - 0 - 0	4	50	100	3	-	-
18UMGC200	ES	Engineering Graphics	2 - 0 - 2	3	50	100	3	-	-
18UCYL200	BS	Engineering Chemistry Lab	0 - 0 - 2	1	50	--	--	50	3
18UCSL200	ES	Problem Solving & Programming in C Lab	0 - 0 - 2	1	50	--	--	50	3
18UHUC201	HU	Functional English	2 - 0 -0	1	50	50	2	--	--
18UHUA202	HU	Environmental Science	2 - 0 - 0	Audit	100	--	--	--	--
Total			**19 - 2 - 6**	**21**	**500**	**550**		**100**	

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III Semester

Course Code	Course Category	Course Title	Teaching		Examination				
			L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
					Max. Marks	*Max. Marks	Duration in Hrs.	Max. Marks	Duration In Hrs.
18UMAC300	BS	Engineering Mathematics-III	3 - 0 - 0	3	50	100	3	-	-
18UMEC300	PC	Basic Thermodynamics	3 - 2 - 0	4	50	100	3	-	-
18UMEC301	PC	Materials Science	4 - 0 - 0	4	50	100	3	-	-
18UMEC302	PC	Strength of Materials	3 - 2 - 0	4	50	100	3	-	-
18UMEC303	PC	Manufacturing Processes - I	3 - 0 - 0	3	50	100	3	--	--
18UMEC304	PC	Machine Drawing	2 - 0 - 2	3	50	100	3	--	--
18UMEL305	PC	Materials Science & Materials Testing Laboratory	0 - 0 - 3	1.5	50	--	--	50	3
18UMEL306	PC	Foundry & Forging Laboratory	0 - 0 - 3	1.5	50	--	--	50	3
		Total	**18- 4- 8**	**24**	**400**	**600**		**100**	

IV Semester

Course Code	Course Category	Course Title	Teaching		Examination				
			L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
					Max. Marks	*Max. Marks	Duration in Hrs.	Max. Marks	Duration In Hrs.
18UMAC400	BS	Engineering Mathematics-IV	3 - 0 - 0	3	50	100	3	-	-
18UMEC400	PC	Fluid Mechanics	3 - 2 - 0	4	50	100	3	-	-
18UMEC401	PC	Manufacturing Processes - II	4 - 0 - 0	4	50	100	3	-	-
18UMEC402	PC	Applied Thermodynamics	3 - 2 - 0	4	50	100	3	-	-
18UMEC403	PC	Metrology and Measurements	3 - 0 - 0	3	50	100	3	--	--
18UMEC404	PC	Design of Machine Elements-I	2 - 2 - 0	3	50	100	3	--	--
18UMEL405	PC	Measurements Laboratory	0 - 0 - 3	1.5	50	--	--	50	3
18UMEL406	PC	Thermal Engineering Laboratory - I	0 - 0 -3	1.5	50	--	--	50	3
18UMEL407	PC	Introductory Project	0 - 0 -2	1	50	--	--	--	--
		Total	**18 - 6 - 8**	**25**	**450**	**600**		**100**	

V Semester

Course Code	Course Category	Course Title	Teaching		Examination				
			L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
					Max. Marks	*Max. Marks	Duration in Hrs.	Max. Marks	Duration In Hrs.
18UHUC500	HU	Management, Economics &Intellectual Property Rights	4-0-0	4	50	100	3	-	-
18UMEC500	PC	Theory of Machines	3-2-0	4	50	100	3	-	-
18UMEC501	PC	Design of Machine Elements-II	3-2-0	4	50	100	3	-	-
18UMEC502	PC	Turbo machines	2-2-0	3	50	100	3	-	-
18UMEC503	PC	Renewable Energy Technology	3-0-0	3	50	100	3	--	--
18UMEE5XX	PE	Program Elective-1	3-0-0	3	50	100	3	--	--
18UMEL504	PC	Machine shop Practice	0-0-3	1.5	50	--	--	50	3
18UMEL505	PC	Thermal EngineeringLaboratory - II	0-0-3	1.5	50	--	--	50	3
18UMEL506	PC	Minor Project-1	0-0-2	1	50	--	--	--	--
18UHUL507	HU	Soft skills/Aptitude	0-0-2	1	50	--	--	--	--
		Total	**18-6-10**	**26**	**500**	**600**		**100**	

Electives

Course code	Elective Courses (PE – 1)
18UMEE521	CAD/CAM (Computer aided design / Computer aided manufacturing)
18UMEE522	Non -traditional machining
18UMEE523	CNC Machine technology
18UMEE524	Introduction to composite materials
18UMEE525	Production Planning & control
18UMEE526	Advanced Metal Joining Technology
18UMEE527	Fundamentals of Automobile Design (Ready Engineer by TATA Technologies)

VI Semester

Course Code	Course Category	Course Title	Teaching		Examination				
			L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
					Max. Marks	*Max. Marks	Duration in Hrs.	Max. Marks	Duration In Hrs.
18UMEC600	PC	Heat Transfer	3-2-0	4	50	100	3	-	-
18UMEC601	PC	Finite Element Methods	3-2-0	4	50	100	3	-	-
18UMEE6XX	PE	Program Elective-2	3-0-0	3	50	100	3	-	-
18UMEE6XX	PE	Program Elective-3	3-0-0	3	50	100	3	-	-
18UMEO6XX	OE	Open Elective-1	3-0-0	3	50	100	3	--	--
18UMEL602	PC	Computer Aided Engineering Analysis Laboratory	0-0-3	1.5	50	--	--	50	3
18UMEL603	PC	Thermal EngineeringLaboratory- III	0-0-3	1.5	50	--	--	50	3
18UMEL604	PC	Minor Project-2	0-0-4	2	50	--	--	50	3
18UHUL605	HU	Soft skills/Aptitude	0-0-2	1	50	--	--	--	--
		Total	**15-4-12**	**23**	**450**	**500**		**150**	

Electives

Course code	Elective Courses (PE-2)	Course code	Elective Courses (PE– 3)	Course code	Elective Courses (OE–1)
18UMEE621	Refrigeration & Air conditioning	18UMEE631	Tool Design Engg.	18UMEO641	Mechatronics
18UMEE622	Nuclear Energy Systems	18UMEE632	Theory of Elasticity	18UMEO642	Total Quality Management
18UMEE623	Advanced Fluid Dynamics	18UMEE633	Mechanical Behavior of Engg. Materials.	18UMEO643	Sustainable Building Technology
18UMEE624	Internal Combustion Engines	18UMEE634	Design and Drawing of Mech. Assemblies	18UMEO644	Work Flow Management
18UMEE625	Cryogenics	18UMEE635	Experimental stress analysis	18UMEO645	Design Thinking
18UMEE626	Alternate Fuels	18UMEE636	Design of IC Engine Components	18UMEO646	Smart Materials and Structures
18UMEE627	Gas Dynamics	18UMEE637	Advanced Automobile Design (Ready Engineer by TATA Technologies)	18UMEO647	Introduction to Scientific programming

VII Semester

Course Code	Course Category	Course Title	Teaching		Examination				
			L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
					Max. Marks	*Max. Marks	Duration in Hrs.	Max. Marks	Duration In Hrs.
18UMEC700	PC	Mechanical Vibrations	3 - 2 - 0	4	50	100	3	-	-
18UMEC701	PC	Control Engineering	3 - 2 - 0	4	50	100	3	-	-
18UMEE7XX	PE	Program Elective-4	3 - 0 - 0	3	50	100	3	-	-
18UMEO7XX	OE	Open Elective-2	3 - 0 - 0	3	50	100	3	--	--
18UMEL702	PC	Dynamics Laboratory	0 - 0 - 2	1	50	--	--	50	3
18UMEL703	PC	Major Project Phase-1	0- 0 - 4	2	50	--	--	50	3
18UMEL704	PC	Internship	4 w e e k s	2	50	--	--	50	3
Total			**12 - 4 -6**	**19**	**350**	**400**		**150**	

Electives

Course code	Elective Courses (PE-4)	Course code	Elective Courses (OE–2)
18UMEE721	Power Plant Engineering	18UMEO731	Introduction to Aircraft Industry & Aircraft Systems
18UMEE722	Design of Heat Exchangers	18UMEO732	Project Management
18UMEE723	Hybrid Vehicle Technology	18UMEO733	Energy Management
18UMEE724	Computational Fluid Dynamics	18UMEO734	Design of Renewable Energy Systems
18UMEE725	Advanced Heat Transfer		
18UMEE726	Heating Ventilation and Air Conditioning		
18UMEE727	Battery and Fuel Cell Technology		

VIII Semester

Course Code	Course Category	Course Title	Teaching		Examination				
			L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
					Max. Marks	*Max. Marks	Duration in Hrs.	Max. Marks	Duration In Hrs.
18UMEC800	PC	Fluid Power Control	4 - 0 - 0	4	50	100	3	-	-
18UMEE8XX	PE	Program Elective-5	3 - 0 - 0	3	50	100	3	-	-
18UMEE/O8XX	PE/OE	Program Elective-6	3 - 0 - 0	3	50	100	3	--	--
18UMEL801	PC	Technical Seminar / Independent study	0 - 0 - 2	1	50	--	--	--	--
18UMEL802	PC	Major Project Phase-2	0- 0 -12	7	50	--	--	50	3
Total			**10 - 0 - 14**	**18**	**250**	**300**	**--**	**50**	**--**

Electives

Course code	Elective Courses (PE- 5)	Course code	Elective Courses (PE- 6)
18UMEE821	Operation Research	18UMEO831	Design of Aircraft structures
18UMEE822	Computer Integrated Manufacturing	18UMEO832	Mechanics of Composite Materials
18UMEE823	Organizational Behavior	18UMEO833	Modeling & Simulation of Dynamic Systems
18UMEE824	Industrial Robotics	18UMEO834	Tribology & Bearing Design
18UMEE825	Rapid Prototyping And Rapid Tooling	18UMEO835	Failure Analysis
18UMEE826	Design For Manufacturing And Assembly	18UMEO836	Surface Engineering
18UMEE827	Estimation and Costing in Mechanical Engineering	18UMEO837	Industry 4.0 & Artificial intelligence

Scheme of Teaching and Examination
I Semester M. Tech.

Course Code	Course Title	Teaching		Examination				
		L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
				Max. Marks	*Max. Marks	Duration in hours	Max. Marks	Duration in hours
20PRMIC100	Research Methodology and IPR	2-0-0	2	50	50	2		
20PMEAC100	Computational Methods in Engineering	4-0-0	4	50	100	3		
20PEADC101	Theoretical Stress Analysis	3-2-0	4	50	100	3		
20PEADC102	Finite Element Methods	4-0-0	4	50	100	3		
20PEADE11X	Elective 1	4-0-0	4	50	100	3		
20PEADL103	Design Engineering Lab 1	0-0-3	2	50			50	3
20PEADL104	Seminar	0-0-2	1	50				
Total		**17-2-5**	**21**	**350**	**450**		**50**	

Electives

Course Code	Elective 1
20PEADE111	Advanced Fluid Dynamics
20PEADE112	Design of Renewable Energy Systems
20PEADE113	Design for Manufacture and Assembly

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II Semester M. Tech.

Course Code	Course Title	Teaching		Examination				
		L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
				Max. Marks	*Max. Marks	Duration in hours	Max. Marks	Duration in hours
20PEADC201	Advanced Theory of Vibrations	4-0-0	4	50	100	3		
20PEADC202	Computational Fluid Dynamics	3-2-0	4	50	100	3		
20PEADE2XX	Elective 2	3-0-2	4	50	100	3		
20PEADE2XX	Elective 3	4-0-0	4	50	100	3		
20PEADE2XX	Elective 4	3-0-2	4	50	100	3		
20PEADL203	Design Engineering Lab 2	0-0-3	2	50			50	3
20PEADL204	Seminar	0-0-2	1	50				
Total		**17-2-9**	**23**	**350**	**500**		**50**	

Electives

Course Code	Elective 2	Course Code	Elective 3	Course Code	Elective 4
20PEADE211	Dynamics & Mechanism Design simulation	20PEADE221	Automobile System Design	20PEADE231	Heating Ventilation & Air Conditioning (HVAC)
20PEADE212	Fracture Mechanics	20PEADE222	Rapid prototyping & Tooling	20PEADE232	Power Plant Design
20PEADE213	Experimental Stress Analysis	20PEADE223	Computer Control of Manufacturing System	20PEADE233	Modeling & Analysis of Thermal system

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III Semester M.Tech.

Course Code	Course Title	Teaching		Examination				
		L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
				Max. Marks	*Max. Marks	Duration in hours	Max. Marks	Duration in hours
20PEADC301	Experimental Techniques	4-0-0	4	50	100	3		
20PEADE3XX	Elective 5	3-0-0	3	50	100	3		
20PEADE3XX	Elective 6	3-0-0	3	50	100	3		
20PEADE3XX	Elective 7	3-0-0	3	50	100	3		
OR								
20PEADL302	Internship in Industry or R&D organization	** Min 4 weeks during vacation after 2nd sem	3	50	--	--	100	3
20PEADL303	*** Project phase 1	0-0-15	9	50			50	3
Total		**13-0-15/10-4weeks-15)**	**22**	**250**	**400/ 300**		**50/150**	

Electives

Course Code	Elective 5	Course Code	Elective 6	Course Code	Elective 7
20PEADE311	Advanced Composite Materials and Mechanics	20PEADE321	Design of Heat Exchangers	20PEADE331	Robust Design
20PEADE312	Mathematical Modeling for Engineering Systems	20PEADE322	Scientific Computing	20PEADE332	Failure Analysis of Materials
20PEADE313	Surface Engineering	20PEADE323	Industry 4.0 & Artificial intelligence	20PEADE333	Industrial Robotics

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IV Semester M.Tech.

Course Code	Course Title	Teaching		Examination				
		L-T-P (Hrs/Week)	Credits	CIE	Theory (SEE)		Practical (SEE)	
				Max. Marks	*Max. Marks	Duration in hours	Max. Marks	Duration in hours
20PEADL401	Project phase-II	0-0-20	22	100	--	--	100	3
Total		**0-0-20**	**22**	**100**	**--**	**--**	**100**	

Total Credits offered for the first year: 44
Total Credits offered for the Second year: 44

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