

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI												
B.E. in MECHANICAL ENGINEERING												
Scheme of Teaching and Examinations 2021												
Outcome Based Education (OBE) and Choice Based Credit System (CBCS)												
(Effective from the academic year 2021 - 22)												
III SEMESTER												
Sl. No	Course and Course Code	Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination				Credits
				Theory Lecture	Tutorial	/	Self -Study	Duration in hours	CIE Marks	SEE Marks	Total Marks	
				L	T	P	S					
1	BSC 21MAT31	Transform Calculus, Fourier Series And Numerical Techniques	Maths	2	2	0	0	03	50	50	100	3
2	IPCC 21ME32	Metal casting, Forming and Joining Processes	TD: ME PSB: ME	3	0	2	0	03	50	50	100	4
3	IPCC 21ME33	Material Science and Engineering	TD: ME PSB: ME	3	0	2	0	03	50	50	100	4
4	PCC 21ME34	Thermodynamics	TD: ME PSB: ME	2	2	0	0	03	50	50	100	3
5	PCC 21MEL35	Machine Drawing and GD & T	TD: ME PSB: ME	0	0	2	0	03	50	50	100	1
6	UHV 21UH36	Social Connect and Responsibility	Any Department	0	0	1	0	01	50	50	100	1
7	HSMC 21KSK37/47	Sanskritika Kannada	TD and PSB: HSMC	1	0	0	0	01	50	50	100	1
	HSMC 21KBK37/47	Balake Kannada										
	OR											
	HSMC 21CIP37/47	Constitution of India and Professional Ethics										
8	AEC 21ME38X	Ability Enhancement Course – III	TD: Concerned department PSB: Concerned Board	If offered as Theory Course				01	50	50	100	1
				0	2	0						
				If offered as lab. course				02				
				0	0	2						
Total									400	400	800	18
9	Scheduled activities for III to VIII semesters	NMDC 21NS83	National Service Scheme (NSS)	NSS	All students have to register for any one of the course namely National Service Scheme, Physical Education (PE)(Sports and Athletics) and Yoga with the concerned coordinator of the course during the first week of III semester. The activities shall be carried out from (for 5 semesters) between III semester to VIII semester. SEE in the above courses shall be conducted during VIII semester examinations and the accumulated CIE marks shall be added to the SEE marks. Successful completion of the registered course is mandatory for the award of the degree. The events shall be appropriately scheduled by the colleges and the same shall be reflected in the colander prepared for							
		NMDC 21PE83	Physical Education (PE)(Sports and Athletics)	PE								
		NMDC 21YO83	Yoga	Yoga								

													the NSS, PE and Yoga activities.
Course prescribed to lateral entry Diploma holders admitted to III semester B.E./B.Tech programs													
1	NCMC 21MATDIP31	Additional Mathematics - I	Maths	02	02	--	--	---	100	---	100	0	
<p>Note:BSC: Basic Science Course, IPCC: Integrated Professional Core Course, PCC: Professional Core Course, INT –Internship, HSMC: Humanity and Social Science & Management Courses, AEC–Ability Enhancement Courses. UHV: Universal Human Value Course.</p> <p>L –Lecture, T – Tutorial, P- Practical/ Drawing, S – Self Study Component, CIE: Continuous Internal Evaluation, SEE: Semester End Examination. TD- Teaching Department, PSB: Paper Setting department</p>													
<p>21KSK37/47 Samskrutika Kannada is for students who speak, read and write Kannada and 21KBK37/47 Balake Kannada is for non-Kannada speaking, reading, and writing students.</p>													
<p>Integrated Professional Core Course (IPCC): Refers to Professional Theory Core Course Integrated with Practicals of the same course. Credit for IPCC can be 04 and its Teaching–Learning hours (L : T : P) can be considered as (3 : 0 : 2) or (2 : 2 : 2). The theory part of the IPCC shall be evaluated both by CIE and SEE. The practical part shall be evaluated by only CIE (no SEE). However, questions from the practical part of IPCC shall be included in the SEE question paper. For more details, the regulation governing the Degree of Bachelor of Engineering /Technology (BE/B.Tech.) 2021-22 may be referred.</p>													
<p>21INT49 Inter/Intra Institutional Internship: All the students admitted to engineering programs under the lateral entry category shall have to undergo a mandatory 21INT49 Inter/Intra Institutional Internship of 03 weeks during the intervening period of III and IV semesters. The internship shall be slated for CIE only and will not have SEE. The letter grade earned through CIE shall be included in the IV semester grade card. The internship shall be considered as a head of passing and shall be considered for vertical progression and for the award of degree. Those, who do not take up / complete the internship shall be declared fail and shall have to complete during subsequently after satisfying the internship requirements. The faculty coordinator or mentor shall monitor the students’ internship progress and interact with them for the successful completion of the internship.</p>													
<p>Non–credit mandatory courses (NCMC):</p> <p>(A) Additional Mathematics I and II:</p> <p>(1) These courses are prescribed for III and IV semesters respectively to lateral entry Diploma holders admitted to III semester of B.E./B.Tech., programs. They shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the Continuous Internal Evaluation (CIE). In case, any student fails to register for the said course/fails to secure the minimum 40 % of the prescribed CIE marks, he/she shall be deemed to have secured an F grade. In such a case, the student has to fulfill the course requirements during subsequent semester/s to earn the qualifying CIE marks. These courses are slated for CIE only and has no SEE.</p> <p>(2) Additional Mathematics I and II shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the courses shall be mandatory for the award of degree.</p> <p>(3) Successful completion of the courses Additional Mathematics I and II shall be indicated as satisfactory in the grade card. Non-completion of the courses. Additional Mathematics I and II shall be indicated as Unsatisfactory.</p> <p>(B) National Service Scheme/Physical Education (Sport and Athletics)/ Yoga:</p> <p>(1) Securing 40 % or more in CIE, 35 % or more marks in SEE and 40 % or more in the sum total of CIE + SEE leads to successful completion of the registered course.</p> <p>(2) In case, students fail to secure 35 % marks in SEE, they have to appear for SEE during the subsequent examinations conducted by the University.</p> <p>(3) In case, any student fails to register for NSS, PE or Yoga/fails to secure the minimum 40 % of the prescribed CIE marks, he/she shall be deemed to have not completed the requirements of the course. In such a case, the student has to fulfill the course requirements during subsequent semester/s to earn the qualifying CIE marks.</p> <p>(4) Successful completion of the course shall be indicated as satisfactory in the grade card. Non-completion of the course shall be indicated as Unsatisfactory.</p> <p>(5) These courses shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the courses shall be mandatory for the award of degree.</p>													
Ability Enhancement Course – III													
21ME381	Introduction to PYTHON (0-0-2-0)			21ME383	Digital Society(0-2-0-0)								
21ME382	Fundamentals of Virtual Reality (0-2-0-0)												

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Sl. No	Course and Course Code	Course Title	Teaching Department (TD) and Question Paper Setting	Teaching Hours /Week				Examination				Credits
				Theory Lecture	Tutorial	/	Self-Study	Duration in hours	CIE Marks	SEE Marks	Total Marks	
				L	T	P	S					
1	BSC 21ME41	Complex Analysis, Probability and Linear Programming.	Maths	2	2	0	0	03	50	50	100	3
2	IPCC 21ME42	Machining Science and Jigs & Fixtures	TD: ME PSB: ME	3	0	2	0	03	50	50	100	4
3	IPCC 21ME43	Fluid Mechanics	TD: ME PSB: ME	3	0	2	0	03	50	50	100	4
4	PCC 21ME44	Mechanics of Materials	TD: ME PSB: ME	2	2	0	0	03	50	50	100	3
5	AEC 21BE45	Biology For Engineers	BT, CHE, PHY	2	0	0	0	02	50	50	100	2
6	PCC 21MEL46	Mechanical Measurements and Metrology Lab	TD: ME PSB: ME	0	0	2	0	03	50	50	100	1
7	HSMC 21KSK37/47	Sanskrutika Kannada	HSMC	1	0	0	0	01	50	50	100	1
	HSMC 21KBK37/47	Balake Kannada										
	OR											
	HSMC 21CIP37/47	Constitution of India & Professional Ethics										
8	AEC 21XX48X	Ability Enhancement Course- IV	TD and PSB: Concerned department	If offered as theory Course				01	50	50	100	1
				0	2	0						
				If offered as lab. Course				02				
				0	0	2						
9	UHV 21UH49	UniversalHumanValues	Any Department	1	0	0		01	50	50	100	1
10	INT 21INT49	Inter/Intra Institutional Internship	Evaluation By the appropriate authorities	Completed during the intervening period of II and III semesters by students admitted to first year of BE./B.Tech and during the intervening period of III and IV semesters by Lateral entry students admitted to III semester.				3	100	--	100	2

											Total	550	450	1000	22
Course prescribed to lateral entry Diploma holders admitted to III semester of Engineering programs															
1	NCCM 21MATDIP41	Additional Mathematics – II	Maths	02	02	--	--	--	100	--	100	0			
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Ability Enhancement Course – IV															
21ME481	Spread Sheets for Engineers (0-0-2-0)		21ME483	Fundamentals of Augmented Reality (0-2-0-0)											
21ME482	Introduction to AI and ML (0-2-0-0)														
<p>Internship of 04 weeks during the intervening period of IV and V semesters; 21INT68 Innovation/ Entrepreneurship/ Societalbased Internship.</p> <p>(1) All the students shall have to undergo a mandatory internship of 04 weeks during the intervening period of IV and V semesters. The internship shall be slated for CIE only and will not have SEE. The letter grade earned through CIE shall be included in the VI semester grade card. The internship shall be considered as a head of passing and shall be considered for vertical progression and for the award of degree. Those, who do not take up / complete the internship shall be considered under F (fail) grade and shall have to complete during subsequently after satisfying the internship requirements.</p> <p>(2) Innovation/ Entrepreneurship Internship shall be carried out at industry, State and Central Government / Non-government organizations (NGOs), micro, small and medium enterprise (MSME), Innovation centers or Incubation centers. Innovation need not be a single major breakthrough, it can also be a series of small or incremental changes. Innovation of any kind can also happen outside of the business world.</p> <p>Entrepreneurship internships offers a chance to gain hands on experience in the world of entrepreneurship and helps to learn what it takes to run a small entrepreneurial business by performing intern duties with an established company. This experience can then be applied to future business endeavours. Start-ups and small companies are a preferred place to learn the business ticks for future entrepreneurs as learning how a small business operates will serve the intern well when he/she manages his/her own company. Entrepreneurship acts as a catalyst to open the minds to creativity and innovation. Entrepreneurship internship can be from several sectors, including technology, small and medium-sized, and the service sector.</p> <p>(3) Societal or social internship.</p> <p>Urbanization is increasing on a global scale; and yet, half the world's population still resides in rural areas and is devoid of</p>															

many things that urban population enjoy. Rural internship, is a work-based activity in which students will have a chance to solve/reduce the problems of the rural place for better living.

As proposed under the AICTE rural internship programme, activities under Societal or social internship, particularly in rural areas, shall be considered for 40 points under AICTE activity point programme.