Visvesvaraya Technological University, Belagavi
Scheme of Teaching and Examinations-2022
Outcome-Based Education(OBE)and Choice Based Credit System(CBCS)
(Effective from the academic year 2022-23)

I Semester (Mechanical Engineering Stream)   **(For Physics Group)**

Sl. No	Course and CourseCode		CourseTitle	TD/PSB	Theory Lecture (L)	Tutorial (T)	Practical/ Drawing (P)	SDA (S)	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
1	*ASC(IC)	**22MATM11	Mathematics for MES-I	Maths	2	2	2	0	03	50	50	100	04
2	#ASC(IC)	22PHYM12	Physics for MES	PHY	2	2	2	0	03	50	50	100	04
3	ESC	22EME13	Elements of Mechanical Engineering	Mechanical	2	2	0	0	03	50	50	100	03
4	ESC-I	22ESC14x	Engineering Science Course-I	Respective Engg Dept.	3	0	0	0	03	50	50	100	03
5	ETC-I	22ETC15x	Emerging Technology Course-I	Any Dept	3	0	0	0	03	50	50	100	03
			OR										
	PLC-I	22PLC15x	Programming language Course-I		2	0	2	0	03				
6	AEC	22ENG16	Communicative English	Humanities	1	0	0	0	01	50	50	100	01
7	HSMC	22KSK17/ 22KBK17	Samskrutika Kannada/ Balake Kannada	Humanities	1	0	0	0	01	50	50	100	01
			OR										
		22ICO17	Indian Constitution										
8	AEC/SDC	22IDT18	Innovation and Design Thinking	Any Dept	1	0	0	0	01	50	50	100	01
			OR										
		22SFH18	Scientific Foundations of Health		1	0	0	0	01				
				TOTAL						**400**	**400**	**800**	**20**

SDA-Skill Development Activities, **TD/PSB**- Teaching Department / Paper Setting Board, **ASC**-Applied Science Course, **ESC**- Engineering Science Courses, **ETC**-Emerging Technology Course, **AEC**- Ability Enhancement Course, **HSMS**-Humanity and Social Science and management Course, **SDC**- Skill Development Course, **CIE**–Continuous Internal Evaluation, **SEE**- Semester End Examination, **IC** – Integrated Course (Theory Course Integrated with Practical Course)

Credit Definition:	04-Credits courses are to be designed for 50 hours of Teaching-Learning Session
1-hour Lecture **(L)** per week=**1Credit**	04-Credits (IC) are to be designed for 40 hours' theory and 12-14 hours of practical sessions
2-hoursTutorial**(T)** per week=**1Credit**	
2-hours Practical / Drawing **(P)** per week=**1Credit**	03-Credits courses are to be designed for 40 hours of Teaching-Learning Session
2-hous Skill Development Actives **(SDA)** per week = **1 Credit**	02- Credits courses are to be designed for 25 hours of Teaching-Learning Session
	01-Credit courses are to be designed for 12-15 hours of Teaching-Learning sessions

Student's Induction Program: Motivating (Inspiring) Activities under the Induction program – The main aim of the induction program is to provide newly admitted students a broad understanding of society, relationships, and values. Along with the knowledge and skill of his/her study, students' character needs to be nurtured as an essential quality by which he/she would understand and fulfill the responsibility as an engineer. The following activities are to be covered in 21 days. Physical Activity, Creative Arts, Universal Human Values, Literary, Proficiency Modules, Lectures by Eminent People, Visits to Local areas, Familiarization with Department/Branch and Innovation, etc. For details, refer the ANNEXURE-I of Induction Programs notification of the University published at the beginning of the 1st semester.

AICTE Activity Points to be earned by students admitted to BE/ B.Tech., / B. Plan day college program (For more details refer to Chapter 6, AICTE Activity Point Program, Model Internship Guidelines): Over and above the academic grades, every regular student admitted to the 4 years Degree program and every student entering 4 years Degree programs through lateral entry, shall earn 100 and 75 Activity Points respectively for the award of degree through AICTE Activity Point Program. Students transferred from other Universities to the fifth semester are required to earn 50 Activity Points from the year of entry to VTU. The Activity Points earned shall be reflected on the student's eighth semester Grade Card. The activities can be spread over the years, any time during the semester weekends, and holidays, as per the liking and convenience of the student from the year of entry to the program. However, the minimum hours' requirement should be fulfilled. Activity Points (non-credit) do not affect SGPA/CGPA and shall not be considered for vertical progression. In case students fail to earn the prescribed activity Points, an Eighth Semester Grade Card shall be issued only after earning the required activity points. Students shall be admitted for the award of the degree only after the release of the Eighth semester Grade Card.

*-22MATM11 Shall have the 03 hours of theory examination(SEE), however, practical sessions question shall be included in the theory question papers. **** The mathematics subject should be taught by a single faculty member per division, with no sharing of the course(subject)module-wise by different faculty members.**
#-22PHYM12 SEE shall have the 03 hours of theory examination and 02-03 hours of practical examination
ESC or ETC of 03 credits Courses shall have only a theory component (L:T :P:S=3:0:0:0) or if the nature the of course required practical learning syllabus shall be designed as an Integrated course (L:T:P:S= 2:0:2:0).**All 01 Credit-** courses shall have the SEE of 01 hours duration and the pattern of the question paper shall be MCQ

(ESC-I) Engineering Science Courses-I		L	T	P	(ETC-I) Emerging Technology Courses-I		L	T	P
Code	Title	L	T	P	Code	Title	L	T	P
22ESC141	Introduction to Civil Engineering	3	0	0	22ETC15A	Smart Materials and Systems	3	0	0
22ESC142	Introduction to Electrical Engineering	3	0	0	22ETC15B	Green Buildings	3	0	0
22ESC143	Introduction to Electronics Engineering	3	0	0	22ETC15C	Introduction to Nano Technology	3	0	0
22ESC144	Introduction to Mechanical Engineering	3	0	0	22ETC15D	Introduction to Sustainable Engineering	3	0	0
22ESC145	Introduction toC Programming	2	0	2	22ETC15E	Renewable Energy Sources	3	0	0
					22ETC15F	Waste Management	3	0	0
					22ETC15G	Emerging Applications of Biosensors	3	0	0
					22ETC15H	Introduction to Internet of Things (IOT)	3	0	0
					22ETC15I	Introduction to Cyber Security	3	0	0
(PLC-I) Programming Language Courses-I									
Code	Title	L	T	P					
22PLC15A	Introduction to Web Programming	2	0	2					
22PLC15B	Introduction to Python Programming	2	0	2					
22PLC15C	Basics to JAVA programming	2	0	2					
22PLC15D	Introduction to C++ Programming	2	0	2					
The course 22ESC145/245, Introduction to C Programming, and all courses under PLC and ETC groups can be taught by faculty of ANY DEPARTMENT									

- The student has to select one course from the ESC-I group.
- MES stream Students shall opt for any one of the courses from the ESC-I group **except, 22ESC144-Introduction to Mechanical Engineering**
- The students have to opt for the courses from ESC group without repeating the course in either 1st or 2nd semester
- The students must select one course from either ETC-I or PLC-I group.
- If students study the subject from ETC-I in 1st semester he/she has to select the course from PLC-II in the 2nd semester and vice-versa

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Visvesvaraya Technological University, Belagavi
Scheme of Teaching and Examinations-2022
Outcome-Based Education(OBE)and Choice Based Credit System(CBCS)
(Effective from the academic year 2022-23)

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II Semester (Mechanical Engineering Stream)   **(For the students who attend the 1st semester under Physics Group)**

Sl. No	Course and Course Code		Course Title	TD/PSB	Teaching Hours/Week				Examination					Credits
					Theory Lecture	Tutorial	Practical/ Drawing	SDA	Duration in hours	CIE Marks	SEE Marks	Total Marks		
					L	T	P	S						
1	*ASC(IC)	** 22MATM21	Mathematics for MES-II	Maths	2	2	2	0	03	50	50	100		04
2	#ASC(IC)	22CHEM22	Chemistry for MES	Chemistry	2	2	2	0	03	50	50	100		04
3	ESC	22CED23	Computer-Aided Engineering Drawing	Civil/Mech Engg dept	2	0	2	0	03	50	50	100		03
4	ESC-II	22ESC24x	Engineering Science Course-II	Respective Engg Dept	3	0	0	0	03	50	50	100		03
5	PLC-II	22ETC25x	Programming Language Course-II	Any Dept	3	0	0	0	03	50	50	100		03
			OR											
	ETC-II	22ETC25x	Emerging Technology Course-II		3	0	0	0	03					
6	AEC	22PWS26	Professional Writing Skills in English	Humanities	1	0	0	0	01	50	50	100		01
7	HSMS	22ICO27	Indian Constitution	Humanities	1	0	0	0	01	50	50	100		01
			OR											
		22KSK27 22KBK27	Samskrutika Kannada/ Balake Kannada											
8	AEC/SEC	22SFH28	Scientific Foundations for Health	Any Dept	1	0	0	0	01	50	50	100		01
			OR											
		22IDT28	Innovation and Design Thinking		1	0	0	0	01					
				TOTAL						**400**	**400**	**800**		**20**

SDA-Skill Development Activities, **TD/PSB**- Teaching Department / Paper Setting Board, **ASC**-Applied Science Course, **ESC**- Engineering Science Courses, **ETC**- Emerging Technology Course, **AEC**- Ability Enhancement Course, **HSMS**-Humanity and Social Science and management Course, **SDC**- Skill Development Course, **CIE** -Continuous Internal Evaluation, **SEE**- Semester End Examination, **IC** – Integrated Course (Theory Course Integrated with Practical Course)

*- 22MATM21 Shall have the 03 hours of theory examination(SEE), however, practical sessions question shall be included in the theory question papers. **** The mathematics subject should be taught by a single faculty member per division, with no sharing of the course(subject)module-wise by different faculty members.**

#-22CHEM22- SEE shall have the 03 hours of theory examination and 02-03 hours of practical examination

ESC or ETC of 03 credits Courses shall have only a theory component (L:T :P:S=3:0:0:0) or if the nature the of course required practical learning syllabus shall be designed as an Integrated course (L:T:P:S= 2:0:2:0)

All 01 Credit- courses shall have the SEE of 01 hours duration and the pattern of the question paper shall be MCQ

(ESC-II) Engineering Science Courses-II		L	T	P	(ETC-II) Emerging Technology Courses-II		L	T	P
Code	**Title**	**L**	**T**	**P**	**Code**	**Title**	**L**	**T**	**P**
22ESC241	Introduction to Civil Engineering	3	0	0	22ETC25A	Smart materials and Systems	3	0	0
22ESC242	Introduction to Electrical Engineering	3	0	0	22ETC25B	Green Buildings	3	0	0
22ESC243	Introduction to Electronics Engineering	3	0	0	22ETC25C	Introduction to Nano Technology	3	0	0
22ESC244	Introduction to Mechanical Engineering	3	0	0	22ETC25D	Introduction to Sustainable Engineering	3	0	0
22ESC245	Introduction to C Programming	2	0	2	22ETC25E	Renewable Energy Sources	3	0	0
					22ETC25F	Waste Management	3	0	0
					22ETC25G	Emerging Applications of Biosensors	3	0	0
					22ETC25H	Introduction to Internet of Things(IoT)	3	0	0
					22ETC25I	Introduction to Cyber Security	3	0	0
(PLC-II) Programming Language Courses-II									
Code	**Title**	**L**	**T**	**P**					
22PLC25A	Introduction to Web Programming	2	0	2					
22PLC25B	Introduction to Python Programming	2	0	2					
22PLC25C	Basics of JAVA programming	2	0	2					
22PLC25D	Introduction to C++ Programming	2	0	2					
The course 22ESC145/245, Introduction to C Programming, and all courses under PLC and ETC groups can be taught by faculty of ANY DEPARTMENT									

- The student has to select one course from the ESC-II group.
- Mechanical Engineering stream Students shall opt for any one of the courses from the ESC-II group **except, 22ESC244-Introduction to Mechanical Engineering**
- The students have to opt for the courses from ESC group without repeating the course in either 1st or 2nd semester
- The students must select one course from either ETC-II or PLC-II group.
- If students study the subject from ETC-I in 1st semester he/she has to select the course from PLC-II in the 2nd semester and vice-versa

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Scheme of Teaching and Examinations-2022
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I Semester   (Mechanical Engineering Stream)   **(For Chemistry Group)**

Sl. No	Course and Course Code		Course Title	TD/PSB	Teaching Hours/Week				Examination					Credits
					Theory Lecture	Tutorial	Practical/ Drawing	SDA	Duration in hours	CIE Marks	SEE Marks	Total Marks		
					L	T	P	S						
1	*ASC(IC)	**22MATM11	Mathematics for ME Streams-I	Maths	2	2	2	0	03	50	50	100		04
2	#ASC(IC)	22CHEM12	Chemistry for ME Streams	Chemistry	2	2	2	0	03	50	50	100		04
3	ESC	22CED13	Computer Aided Engineering Drawing	Civil/Mech Engg dept	2	0	2	0	03	50	50	100		03
4	ESC-I	22ESC14x	Engineering Science Course-I	Respective Engg Dept	3	0	0	0	03	50	50	100		03
5	ETC-I	22ETC15x	Emerging Technology Course-I/	Any Dept	3	0	0	0	03	50	50	100		03
			OR											
	PLC-I	22PLC15x	Programming Language Course-I		2	0	2	0	03					
6	AEC	22ENG16	Communicative English	Humanities	1	0	0	0	01	50	50	100		01
7	HSMS	22ICO17	Indian Constitution	Humanities	1	0	0	0	01	50	50	100		01
			OR											
		22KSK17 22KBK17	Samskrutika Kannada/ Balake Kannada											
8	AEC/SEC	22SFH18	Scientific Foundations for Health	Any Dept	1	0	0	0	01	50	50	100		01
			OR											
		22IDT18	Innovation and Design Thinking		1	0	0	0	01					
			TOTAL							400	400	800		20

SDA-Skill Development Activities, **TD/PSB**- Teaching Department / Paper Setting Board, **ASC**-Applied Science Course, **ESC**- Engineering Science Courses, **ETC**- Emerging Technology Course, **AEC**- Ability Enhancement Course, **HSMS**-Humanity and Social Science and management Course, **SDC**- Skill Development Course, **CIE** -Continuous Internal Evaluation, **SEE**- Semester End Examination, **IC** – Integrated Course (Theory Course Integrated with Practical Course)

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#-22CHEM12- SEE shall have the 03 hours of theory examination and 02-03 hours of practical examination

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All 01 Credit- courses shall have the SEE of 01 hours duration and the pattern of the question paper shall be MCQ

Credit Definition:	
Credit Definition:	04-Credits courses are to be designed for 50 hours of Teaching-Learning Session
1-hour Lecture **(L)** per week=**1Credit**	04-Credits (IC) are to be designed for 40 hours' theory and 12-14 hours of practical sessions
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	01-Credit courses are to be designed for 12-15 hours of Teaching-Learning sessions

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(ESC-I) Engineering Science Courses-I					(ETC-I) Emerging Technology Courses-I				
Code	Title	L	T	P	Code	Title	L	T	P
22ESC141	Introduction to Civil Engineering	3	0	0	22ETC15A	Smart Materials and Systems	3	0	0
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22ESC144	Introduction to Mechanical Engineering	3	0	0	22ETC15D	Introduction to Sustainable Engineering	3	0	0
22ESC145	Introduction toC Programming	2	0	2	22ETC15E	Renewable Energy Sources	3	0	0
					22ETC15F	Waste Management	3	0	0
					22ETC15G	Emerging Applications of Biosensors	3	0	0
					22ETC15H	Introduction to Internet of Things (IOT)	3	0	0
					22ETC15I	Introduction to Cyber Security	3	0	0
(PLC-I) Programming Language Courses-I									
Code	Title	L	T	P					
22PLC15A	Introduction to Web Programming	2	0	2					
22PLC15B	Introduction to Python Programming	2	0	2					
22PLC15C	Basics to JAVA programming	2	0	2					
22PLC15D	Introduction to C++ Programming	2	0	2					
The course 22ESC145/245, Introduction to C Programming, and all courses under PLC and ETC groups can be taught by faculty of ANY DEPARTMENT									

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(Effective from the academic year 2022-23)

II Semester (Mechanical Engineering Stream) — (For the students who have attended 1semster under Chemistry Group)

Sl. No	Course and Course Code		Course Title	TD/PSB	Theory Lecture L	Tutorial T	Practical/ Drawing P	SDA S	Duration in hours	CIE Marks	SEE Marks	Total Marks	Credits
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5	PLC-II	22PLC25x	Programming Language Course-II	Any Dept	2	0	2	0	03	50	50	100	03
			OR										
	ETC-II	22ETC25x	Emerging Technology Course-II		3	0	0	0	03				
6	AEC	22PWS26	Professional Writing Skills in English	Humanities	0	2	0	0	01	50	50	100	01
7	HSMC	22KSK27 22KBK27	Samskrutika Kannada/ Balake Kannada	Humanities	0	2	0	0	01	50	50	100	01
			OR										
		22ICO27	Indian Constitution										
8	AEC/SDC	22IDT28	Innovation and Design Thinking	Any Dept	0	0	2	0	02	50	50	100	01
			OR										
		22SFH28	Scientific Foundations of Health		1	0	0	0	01				
			TOTAL							400	400	800	20

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(ESC-II) Engineering Science Courses-II					(ETC-II) Emerging Technology Courses-II				
Code	Title	L	T	P	Code	Title	L	T	P
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22ESC243	Introduction to Electronics Engineering	3	0	0	22ETC25C	Introduction to Nano Technology	3	0	0
22ESC244	Introduction to Mechanical Engineering	3	0	0	22ETC25D	Introduction to Sustainable Engineering	3	0	0
22ESC245	Introduction to C Programming	2	0	2	22ETC25E	Renewable Energy Sources	3	0	0
					22ETC25F	Waste Management	3	0	0
					22ETC25G	Emerging Applications of Biosensors	3	0	0
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					22ETC25I	Introduction to Cyber Security	3	0	0
(PLC-II) Programming Language Courses-II									
Code	Title	L	T	P					
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22PLC25B	Introduction to Python Programming	2	0	2					
22PLC25C	Basics to JAVA programming	2	0	2					
22PLC25D	Introduction to C++ Programming	2	0	2					
The course 22ESC145/245, Introduction to C Programming, and all courses under PLC and ETC groups can be taught by faculty of ANY DEPARTMENT									

- The student has to select one course from the ESC-II group.
- Mechanical Engineering stream Students shall opt for any one of the courses from the ESC-II group **except, 22ESC244-Introduction to Mechanical Engineering**
- The students have to opt for the courses from ESC group without repeating the course in either 1st or 2nd semester
- The students must select one course from either ETC-II or PLC-II group.
- If students study the subject from ETC-I in 1st semester he/she has to select the course from PLC-II in the 2nd semester and vice-versa