

Sharnbasva University, Kalaburagi												
Scheme of Teaching and Examination 2021-22												
[As per NEP, Outcome Based Education(OBE) and Choice Based Credit System(CBCS) Scheme]												
(Effective from the academic year 2021-22)												
Programme: B.Tech: Mechanical Engineering												
III SEMESTER												
Sl. No.	Course Code		Course Title	Teaching Department	Teaching Hours/week			Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
1	BS	21MAT31	Engineering Mathematics-III	Mathematics	3	1	0	3	50	50	100	04
2	PCC	21ME32	Basic Thermodynamics	ME	3	1	0	3	50	50	100	04
3	PCC	21ME33	Manufacturing Process	ME	3	0	0	3	50	50	100	03
4	PCC	21ME34	Material Science	ME	3	0	0	3	50	50	100	03
5	PCC	21MEL35	Computer aided Machine Drawing Lab	ME	1	0	4	3	50	50	100	03
6	PCC	21MEL36	Material Science Lab	ME	0	0	2	3	50	50	100	01
7	PCC	21MEL37	Workshop Practice Lab	ME	0	0	2	3	50	50	100	01
8	PW	21MEMP38	Project-III	ME	0	0	2	3	50	50	100	01
9	HSS	18KANKK310 /20KANAK310	Kannada Kali-III/ Ayda Kategalu	Humanities	1	0	0	3	50	50	100	01
Total					14	2	10	27	450	450	900	21
Note:BS-Basic Science, PCC- Programme Core Course, PW-Project Work, AEC- Ability Enhancement Course,HSS-HumanityandSocialScience,NCMC-NonCreditMandatoryCourse												
21KANKK310KannadaKali-III is for non Kannada speaking ,reading and writing students and 21KANAK310 Ayda Kategalu is for the students who speak, read and write Kannada.												
Project(PRJ):Based on the ability/abilities of the student/s and recommendations of the mentor, a single discipline or multi disciplinary mini project can be Assigned to an individual students or to a group having not more than 4students.												

<b>Courses prescribed to lateral entry Diploma holders admitted to III semester of Engineering programs</b>												
10	NCMC	21MATDIP31	Additional Mathematics– I	Mathematics	3	0	-	00	100	00	100	00
<p>1) Non Credit Mandatory Courses (NCMC) Additional Mathematics-I and II prescribed for III and IV semesters respectively, to the lateral entry Diploma holders admitted to III semester of B. Tech. programs, shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the university examination. In case any student fails to secure the minimum 50% of the prescribed CIE marks, he/she shall be deemed to have secured F grade. In such a case, the students have to fulfill the requirements during subsequent semester/s.</p> <p>2) These courses shall not be mandatory for vertical progression, but completion of the courses shall be mandatory for the award of degree.</p>												
<b>Courses prescribed to lateral entry B.Sc. degree holders admitted to III semester of Engineering programs</b>												
Lateral entry students from B.Sc. stream, shall clear the non credit courses Computer Aided Engineering Drawing, Elements of Civil Engineering of First Year Engineering Programme. These Courses shall not be considered for vertical progression, but completion of the courses shall be mandatory For the award of degree.												
<p><b>AICTE Activity Points to be earned by students admitted to B.Tech. programme ( For more details refer to Chapter 6,AICTE Activity Point Programme, Model Internship Guidelines):</b></p> <p>Over and above the academic grades, every regular student admitted to the 4 years Degree programme and every student entering 4 years Degree programme through lateral entry, shall earn 100 and 75 Activity points respectively for the award of degree through AICTE Activity Point Programme. Students transferred from other universities to fifth semester are required to earn 50 activity points from the year of entry to Sharnbasva University. The Activity Points earned shall be reflected on the students eighth semester Grade card.</p> <p>The activities can be spread over the years, any time during the semester week end holidays, as per the liking and convenience of the student from the year of entry to the programme. However, minimum hours requirement should be fulfilled. Activity Points(non credit) have no effect on SGPA/CGPA and shall not be considered for vertical progression.</p> <p>In case students fail to earn the prescribed activity points, Eighth semester Grade Card shall be issued only after earning the required activity points. Student shall be admitted for the award of the degree only after the release of the Eighth semester Grade Card.</p>												

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Scheme of Teaching and Examination2021-22												
[As per NEP, Outcome Based Education(OBE) and Choice Based Credit System(CBCS) Scheme]												
(Effective from the academic year 2021-22)												
Programme: B.Tech: Mechanical Engineering												
IV SEMESTER												
Sl. No.	Course Code		Course Title	Teaching Department	Teaching Hours/week			Examination				Credits
					Theory Lecture	Tutorial	Practical/Draw	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
1	BS	21MAT41	Engineering Mathematics-IV	Mathematics	3	1		3	50	50	100	04
2	PCC	21ME42	Fundamentals of Fluid Mechanics	ME	3	0	0	3	50	50	100	03
3	PCC	21ME43	Applied Thermodynamics	ME	3	1	0	3	50	50	100	04
4	PCC	21ME44	Instrumentation and Metrology	ME	3	0	0	3	50	50	100	03
5	PCC	21MEL45	Fluid Mechanics Lab	ME	0	0	2	3	50	50	100	01
6	PCC	21MEL46	Instrumentation and Measurement Lab	ME	0	0	2	3	50	50	100	01
7	PCC	21MEL47	Foundry and Forging Lab	ME	0	0	2	3	50	50	100	01
8	PW	21MEM48	Project-IV	ME	0	0	2	3	50	50	100	01
9	HSS	21KANKK410/21KANMD410	Kannada Kali-IV/ Mahadasohigalu	Humanities	1	0	0	3	50	50	100	01
10	AEC	21AEC411X	Ability Enhancement Course-IV	ME	0	0	2	3	50	50	100	01
Total					13	2	10	30	500	500	1000	20
Note:BS-Basic Science, PCC- Programme Core Course, PW-Project Work, AEC- Ability Enhancement Course, HSS-Humanity and Social Science, NCMC-Non Credit Mandatory Course												
21KANKK410Kannada Kali-IV is for non Kannada speaking, reading and writing students and 21KANMD410 Mahadasohigalu is for the students who speak,Read and write Kannada.												

Project(PRJ):Based on the ability/abilities of the student/s and recommendations of the mentor, a single discipline or multi disciplinary mini project can be Assigned to an individual students or to a group having not more than 4students.													
Ability Enhancement Course-4													
Course code under 21AEC411X					Course Title								
21AEC49A					3D Printing								
21AEC49B					Nano materials								
Courses prescribed to lateral entry Diploma holders admitted to III semester of Engineering programs													
11	NCMC	21MATDIP41	Additional Mathematics–II		Mathematics	3	0	-	00	100	00	100	00
1) Non Credit Mandatory Courses (NCMC) Additional Mathematics-I and II prescribed for III and IV semesters respectively, to the lateral entry Diploma holders admitted to III semester of B. Tech. programs, shall attend the classes during the respective semesters to complete all the formalities of the course and appear for the university examination. In case any student fails to secure the minimum 50% of the prescribed CIE marks, he/she shall be deemed to have secured F grade. In such a case, the students have to fulfill the requirements during subsequent semester/s.													
2) These courses shall not be mandatory for vertical progression, but completion of the courses shall be mandatory for the award of degree.													
Courses prescribed to lateral entry B.Sc. degree holders admitted to III semester of Engineering programs													
Lateral entry students from B.Sc. stream, shall clear the non credit courses Computer Aided Engineering Drawing, Elements of Civil Engineering of First Year Engineering Programme. These Courses shall not be considered for vertical progression,butcompletionofthecoursseshallbemandatory For the award of degree.													
AICTE Activity Points to be earned by students admitted to B.Tech. programme ( For more details refer to Chapter 6,AICTE Activity Point Programme, Model Internship Guidelines):													
Over and above the academic grades, every regular student admitted to the 4 years Degree programme and every student entering 4 years Degree programme through lateral entry, shall earn 100 and 75 Activity points respectively for the award of degree through AICTE Activity Point Programme. Students transferred from other universities to fifth semester are required to earn 50 activity points from the year of entry to Sharnbasva University. The Activity Points earned shall be reflected on the students eighth semester Grade card.													
The activities can be spread over the years, anytime during the semester weekends holidays, as per the liking and convenience of the student from the year of entry to the programme. However, minimum hours requirement should be fulfilled. Activity Points (non credit) have no effect on SGPA/CGPA and shall not be considered for vertical progression.													
In case students fail to earn the prescribed activity points, Eighth semester Grade Card shall be issued only after earning the required activity points. Student shall be admitted for the award of the degree only after the release of the Eighth semester Grade Card.													

**Sharnbasva University, Kalaburagi**  
**Scheme of Teaching and Examination 2021-22**  
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(Effective from the academic year 2021-22)

**Programme: B.Tech: Mechanical Engineering**

**V SEMESTER**

Sl. No.	Course Code		Course Title	Teaching Department	Teaching Hours/week			Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
1	HSS	21HSMC51	Management and Entrepreneurship Development	Humanities	3			3	50	50	100	03
2	PCC	21ME52	Theory of Machines	ME	3			3	50	50	100	03
3	PCC	21ME53	Turbo Machines	ME	3	1		3	50	50	100	04
4	PEC	21ME54X	Professional Elective Course-I	ME	3			3	50	50	100	03
5	OEC	21ME55X	Open Elective Course-I	ME	3	1		3	50	50	100	04
6	PCC	21MEL56	Fluid machines Lab	ME			2	3	50	50	100	01
7	PCC	21MEL57	Machine shop Lab	ME			2	3	50	50	100	01
8	PEC	21MEL58	Design /Machine dynamics lab	ME			2	3	50	50	100	01
9	PW	21PRJ59	Project-V	ME			2	3	50	50	100	01
10	AEC	21AEC510X	Ability Enhancement Course-V	ME	1			3	50	50	100	01
Total					16	2	8	30	500	500	1000	22

Note: PCC- Programme Core Course, PEC- Professional Elective Course, PW-Project Work, HSS-Humanity and Social Science, OEC- Open Elective Course, AEC- Ability Enhancement Course, UHV- Universal Human Values.

Project(PRJ): A batch of 4 to 5 students (Same branch or different branches) with a guide, may undertake one project (1 hour of theory/tutorial or two hours of practice /activities).

<b>Professional Elective Course-I</b>	
<b>Course code under 21ME54X</b>	<b>Course Title</b>
21ME541	Machine Tools Operations
21ME542	Alternative fuels & Hybrid system
21ME543	Composite material technology
<b>Open Elective Course-I</b>	
<b>Course code under 21XX55X</b>	<b>Course Title</b>
21ME551	Supply chain Management
21ME552	Micro-electromechanical system
<b>Ability Enhancement Course-V</b>	
<b>Coursecodeunder21ME510X</b>	<b>Course Title</b>
21AEC5101	Introduction to Sand Moulding
21 AEC5102	Technical writing skill
<b>AICTE Activity Points:</b> In case students fail to earn the prescribed activity points, eight semester Grade Card shall be issued only after earning the Required activity points. Student shall be admitted for the award of the degree only after the release of the Eight semester Grade Card.	

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Programme: B.Tech: Mechanical Engineering												
VI SEMESTER												
Sl. No.	Course Code		Course Title	Teaching Department	Teaching Hours/week			Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
1	PCC	21ME61	Mechanics of Materials	ME	3			3	50	50	100	03
2	PCC	21ME62	Design of Machine Elements	ME	3	1		3	50	50	100	04
3	PEC	21ME63X	Professional Elective Course-II	ME	3			3	50	50	100	03
4	OEC	21ME64X	Professional Elective Course-III	ME	3			3	50	50	100	03
5	OEC	21ME65X	Open Elective Course-II		3			3	50	50	100	03
6	PCC	21MEL66	Energy Conversion Lab	ME			2	3	50	50	100	01
7	PEC	21MEL67X	Professional Elective Course-II Laboratory	ME			2	3	50	50	100	01
8	PW	21PRJ68	Project-VI	ME			2	3	50	50	100	01
9	HSS	21HSM69	Professional Ethics	Humanities	1			3	50	50	100	01
10	AEC	21AEC610X	Ability Enhancement Course-VI	ME	1			3	50	50	100	01
Total					17	2	6	30	500	500	1000	21

Note: PCC-Professional Core Course, PEC-Professional Elective Course, OEC-Open Elective Course, PW-Project Work, HSS-Humanity and Social Science, AEC- Ability Enhancement Course.

Project (PRJ): A batch of 4 to 5 students (Same branch or different branches) with a guide, may undertake one project (1 hour of theory/tutorial or two hours of practice /activities).

#### Professional Elective Course-II

Course code under 21ME63X	Course Title	Course code under 21MEL67X	Course Title
21ME631	Finite Element Methods	21MEL671	CAMA Lab
21ME632	Automation & Robotics	21MEL672	SIMULATION Lab
21ME633	Non Traditional Machining		

#### Professional Elective Course-III

Course code under 21ME63X	Course Title
21ME641	Additive Manufacturing
21ME642	Computer Integrated Manufacturing
21ME643	Total Quality Management

#### Open Elective Course-II

Course code under 21XX65X	Course Title
21ME651	Human Resource management
21ME652	Finance Management

#### Ability Enhancement Course-VI

Course code under 21ME610X	Course Title
21AEC6101	Introduction to GD&T
21AEC6102	Introduction to cutting tools

**AICTE Activity Points:** In case students fail to earn the prescribed activity points, Eighth semester Grade Card shall be issued only after earning the Required activity points. Student shall be admitted for the award of the degree only after the release of the Eighth semester Grade Card.



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Programme: B. Tech: Mechanical Engineering												
VII SEMESTER												
Sl. No.	CourseCode		CourseTitle	Teaching Department	Teaching Hours/week			Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Duration inHours	CIEMarks	SEEMarks	Total Marks	
1	PCC	21ME71	Hydraulics and Pneumatics	ME	2	1		3	50	50	100	03
2	PCC	21ME72	Heat and Mass Transfer	ME	2	1		3	50	50	100	03
3	PCC	21ME73	Operations Research	ME	2	1		3	50	50	100	03
4	PEC	21ME742	Mechatronics	ME	2	1		3	50	50	100	03
5	OEC	21ME751	Operation Management	ME	3	1		3	50	50	100	04
6	PCC	21MEL76	Hydraulics and Pneumatics Laboratory	ME			2	3	50	50	100	01
7	PCC	21MEL77	Heat and Mass Transfer Laboratory	ME			2	3	50	50	100	01
8	PEC	21MEL782	Professional Elective Course-IV Laboratory	ME			2	3	50	50	100	01
9	PW	21PRJ79	Project-VII	ME			2	3	50	50	100	01
10	HSS	21HSM710	Industrial Psychology and Organizational Behavior	Humanities	1			3	50	50	100	01
11	AEC	21AECME711A	Basics of Fuel Characterization	ME			2	3	50	50	100	01
Total					13	5	10	33	550	550	1100	22

Note: PCC-Professional Core Course, PEC-Professional Elective Course, OEC-Open Elective Course, PW-Project Work, HSS-Humanity and Social Science, AEC-Ability Enhancement Course.

Project (PRJ): A batch of 4 to 5 students (Same branch or different branches) with a guide, may undertake one project (1 hour of theory/tutorial or two hours of practice /activities).

#### Professional Elective Course-IV

Course code under 21ME74X	Course Title	Course code under 21MEL78X	Course Title
21ME741	Control Engineering	21MEL781	Control Engineering Virtual Laboratory
21ME742	Mechatronics	21MEL782	Mechatronics Laboratory

#### Open Elective Course-III

Course code under 21ME75X	Course Title
21ME751	Operation Management
21ME752	Non-Conventional Energy Resources

**AICTE Activity Points:** In case students fail to earn the prescribed activity points, eighth semester Grade Card shall be issued only after earning the Required activity points. Student shall be admitted for the award of the degree only after the release of the Eighth semester Grade Card.

#### Ability Enhancement Course-VII

Course code under 22AECME711X	Course Title
21AECME711A	Basics of Fuel Characterization
21AECME711B	Introduction to Gauges and Measurements

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<b>Programme: B. Tech: Mechanical Engineering</b>												
<b>VIII SEMESTER</b>												
Sl. No.	Course Code		Course Title	Teaching Department	Teaching Hours/week			Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	Duration in Hours	CIE Marks	SEE Marks	Total Marks	
1	Project	21PRJ81	Research Project / Field Project - VIII				16	3	50	50	100	08
2	Internship	21MEI82	Internship				12	3	50	50	100	06
<b>Total</b>							<b>28</b>	<b>6</b>	<b>100</b>	<b>100</b>	<b>200</b>	<b>14</b>
Note: PCC-Professional Core Course, PEC-Professional Elective Course, OEC-Open Elective Course, PW-Project Work, HSS-Humanity and Social Science, AEC- Ability Enhancement Course. Internship- To be carried out during the vacation/s of VI and VII semesters or VII and VIII semesters Project (PRJ): A batch of 4 to 5 students (Same branch or different branches) with a guide, may undertake one project (1 hour of theory/tutorial or two hours of practice /activities). <b>Note: Project-8 Manufacturable and marketable project / Research project/Field Project.</b>												