

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI**  
**Scheme of Teaching and Examination 2017-2018**  
**Choice Based Credit System (CBCS)**

**B.E: Automobile Engineering**

**III SEMESTER**

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17MAT31	Engineering Mathematics –III*	Maths	04		03	60	40	100	4
2	17AU32	Material Science and Metallurgy	Auto. Engg.	04		03	60	40	100	4
3	17AU33	Engineering Thermodynamics	Auto. Engg.	04		03	60	40	100	4
4	17AU34	Mechanics of Materials	Auto. Engg.	04		03	60	40	100	4
5	17AU35	Mechanical Measurements and Metrology	Auto. Engg.	04		03	60	40	100	4
6	17AU36	Manufacturing Process-I	Auto. Engg.	03		03	60	40	100	3
7	17AUL37	Metallography and Material Testing Laboratory	Auto. Engg.	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17AUL38	Foundry and Forging Laboratory	Auto. Engg.	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
9	17KL/CPH39/49	Kannada/Constitution of India, Professional Ethics and Human Rights	Humanities	01		01	30	20	50	01
<b>TOTAL</b>				<b>Theory:24hours Practical: 06 hours</b>		<b>25</b>	<b>510</b>	<b>340</b>	<b>850</b>	<b>28</b>

**1. Kannada/Constitution of India, Professional Ethics and Human Rights:** 50 % of the programs of the Institution have to teach Kannada/Constitution of India, Professional Ethics and Human Rights in cycle based concept during III and IV semesters.

**2. Audit Course:**

(i) \*All lateral entry students (except B.Sc candidates) have to register for Additional Mathematics – I, which is 03 contact hours per week.

1	17MATDIP31	Additional Mathematics –I	Maths	03		03	60	--	60	--
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(ii) Language English (Audit Course) be compulsorily studied by all lateral entry students (except B.Sc candidates)

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**IV SEMESTER**

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17MAT41	Engineering Mathematics –IV*	Maths	04		03	60	40	100	4
2	17AU42	Fluid Mechanics	Auto. Engg.	04		03	60	40	100	4
3	17AU43	Kinematics of Machines	Auto. Engg.	04		03	60	40	100	4
4	17AU44	Automotive Engines	Auto. Engg.	04		03	60	40	100	4
5	17AU45	Computer Aided Machine Drawing	Auto. Engg.	04		03	60	40	100	4
6	17AU46	Manufacturing Process -II	Auto. Engg.	03		03	60	40	100	3
7	17AUL47	Mechanical Measurement and Metrology Lab	Auto. Engg.	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17AUL48	Machine Shop	Auto. Engg.	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
9	17KL/CPH39/49	Kannada/Constitution of India, Professional Ethics and Human Rights	Humanities	01		01	30	20	50	01
<b>TOTAL</b>				<b>Theory:24hours Practical: 06 hours</b>		<b>25</b>	<b>510</b>	<b>340</b>	<b>850</b>	<b>28</b>

**1. Kannada/Constitution of India, Professional Ethics and Human Rights:** 50 % of the programs of the Institution have to teach Kannada/Constitution of India, Professional Ethics and Human Rights in cycle based concept during III and IV semesters.

**2. Audit Course:**

(i) \*All lateral entry students (except B.Sc candidates) have to register for Additional Mathematics – II, which is 03 contact hours per week.

1	17MATDIP41	Additional Mathematics –II	Maths	03		03	60	--	60	--
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(ii) Language English (Audit Course) be compulsorily studied by all lateral entry students (except B.Sc candidates)

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**V SEMESTER**

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration inhours	SEE Marks	CIE Marks	Total Marks	
1	17AU51	Management of Entrepreneurship	Auto. Engg.	04		03	60	40	100	4
2	17AU52	Dynamics of Machines	Auto. Engg.	04		03	60	40	100	4
3	17AU53	Design of Machine Elements - I	Auto. Engg.	04		03	60	40	100	4
4	17AU54	Automotive Fuels and Combustion	Auto. Engg.	04		03	60	40	100	4
5	17AU55X	Professional Elective-1	Auto. Engg.	03		03	60	40	100	3
6	17AU56X	Open Elective-1	Auto. Engg.	03		03	60	40	100	3
7	17AUL57	Automotive Engine Components Lab	Auto. Engg.	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17AUL58	Fluid Mechanics and Fuel testing Lab.	Auto. Engg.	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
<b>TOTAL</b>				<b>Theory:22hours Practical: 06 hours</b>		<b>24</b>	<b>480</b>	<b>320</b>	<b>800</b>	<b>26</b>

<b>Professional Elective-1</b>		<b>Open Elective – 1***</b>	
17AU551	CAD/CAM	17AU561	Automobile Engineering
17AU552	Vehicle Transport Management	17AU562	Alternative Energy Sources for Automobiles
17AU553	Automotive Air Conditioning and Refrigeration	17AU563	Non Traditional Machining
17AU554	Hydraulics and Pneumatics	...	

\*\*\*Students can select any one of the open electives offered by any Department (Please refer to consolidated list of VTU for open electives).

Selection of an open elective is not allowed, if:

- The candidate has no pre – requisite knowledge.
- The candidate has studied similar content course during previous semesters.
- The syllabus content of the selected open elective is similar to that of Departmental core course(s) or to be studied Professional elective(s).

Registration to open electives shall be documented under the guidance of Programme Coordinator and Adviser.

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**VI SEMESTER**

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration inhours	SEE Marks	CIE Marks	Total Marks	
1	17AU61	Automotive Chassis & Suspension	Auto. Engg.	04		03	60	40	100	4
2	17AU62	Heat and Mass transfer	Auto. Engg.	04		03	60	40	100	4
3	17AU63	Design of Machine Elements-II	Auto. Engg.	04		03	60	40	100	4
4	17AU64	Automotive Transmission	Auto. Engg.	04		03	60	40	100	4
5	17AU65X	Professional Elective-2	Auto. Engg.	03		03	60	40	100	3
6	17AU66X	Open Elective-2	Auto. Engg.	03		03	60	40	100	3
7	17AUL67	Automotive Chassis Components Lab	Auto. Engg.	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17AUL68	Engine Testing and Emission Measurement Lab.	Auto. Engg.	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
<b>TOTAL</b>				<b>Theory:22hours Practical: 06 hours</b>		<b>24</b>	<b>480</b>	<b>320</b>	<b>800</b>	<b>26</b>

<b>Professional Elective-2</b>		<b>Open Elective – 2***</b>	
17AU651	Robotics	17AU661	Engineering Economics and Cost Estimation
17AU652	Experimental Stress analysis	17AU662	Hybrid and Electric Vehicles
17AU653	Composite Materials	17AU663	Non-destructive Testing
17AU654	Automotive Pollution and Control	....	

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Selection of an open elective is not allowed, if:

- The candidate has no pre – requisite knowledge.
- The candidate has studied similar content course during previous semesters.
- The syllabus content of the selected open elective is similar to that of Departmental core course(s) or to be studied Professional elective(s).

Registration to open electives shall be documented under the guidance of Programme Coordinator and Adviser.

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**VII SEMESTER**

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration inhours	SEE Marks	CIE Marks	Total Marks	
1	17AU71	Automotive Electrical and Electronic Systems	Auto. Engg.	04		03	60	40	100	4
2	17AU72	Automotive Engine Components Design and Auxiliary Systems	Auto. Engg.	04		03	60	40	100	4
3	17AU73	Finite Element Modeling and Analysis	Auto. Engg.	04		03	60	40	100	4
4	17AU74X	Professional Elective-3	Auto. Engg.	03		03	60	40	100	3
5	17AU75X	Professional Elective-4	Auto. Engg.	03		03	60	40	100	3
6	17AUL76	Automobile Scanning and Re-conditioning lab	Auto. Engg.	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
7	17AUL77	Modeling and Analysis Lab	Auto. Engg.	01-Hour Instruction 02-Hour Practical		03	60	40	100	2
8	17AUP78	Project Work Phase-I + Project work Seminar	Auto. Engg.		03	--	--	100	100	2
<b>TOTAL</b>				<b>Theory:18 hours Practical and Project: 09 hours</b>		<b>21</b>	<b>420</b>	<b>380</b>	<b>800</b>	<b>24</b>

Professional Elective-3		Professional Elective-4	
17AU741	Earthmoving Equipment & Tractors	17AU751	Control Engineering
17AU742	Computer Integrated Manufacturing	17AU752	Engineering Economy
17AU743	Tribology	17AU753	Operations Research
17AU744	Engineering System Design	17AU754	Two and Three wheeled Vehicle

**1. Project Phase – I and Project Seminar:** Comprises of Literature Survey, Problem identification, Objectives and Methodology. CIE marks shall be based on the report covering Literature Survey, Problem identification, Objectives and Methodology and Seminar presentation skill.

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**VIII SEMESTER**

Sl. No	Course Code	Title	Teaching Department	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration in hours	SEE Marks	CIE Marks	Total Marks	
1	17AU81	Vehicle Body Engineering and Safety	Auto. Engg.	4	-	3	60	40	100	4
2	17AU82	Mechanical Vibrations	Auto. Engg.	4	-	3	60	40	100	4
3	17AU83X	Professional Elective-5	Auto. Engg.	3	-	3	60	40	100	3
4	17AU84	Internship/ Professional Practice	Auto. Engg.	Industry Oriented		3	50	50	100	2
5	17AUP85	Project Work-II	Auto. Engg.	-	6	3	100	100	200	6
6	17AUS86	Seminar		-	4	-	-	100	100	1
<b>TOTAL</b>				<b>Theory:11 hours Project and Seminar: 10 hours</b>		<b>15</b>	<b>330</b>	<b>370</b>	<b>700</b>	<b>20</b>

<b>Professional Elective -5</b>	
17AU831	Total Quality Management
17AU832	Database Management systems
17AU833	Advanced I. C. Engines
17AU834	Maintenance Engineering

**1. Internship/ Professional Practice:** 4 Weeks internship to be completed between the (VI and VII semester vacation) and/or (VII and VIII semester vacation) period.