

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI**  
**Scheme of Teaching and Examination 2018-19**  
**B.E. MARINE ENGINEERING**  
**Outcome Based Education (OBE) and Choice Based Credit System (CBCS)**  
**(Effective from the academic year 2018-19)**

**III SEMESTER**

Sl. No.	Course and Course code		Course Title	Teaching Department	Teaching Hours /Week			Examination			Credits	
					Theory	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks		Total Marks
1	BSC	18MAT31	Transform Calculus, Fourier Series and Numerical Techniques	Mathematics	2	2	--	03	40	60	100	3
2	PCC	18MR32	Material Science	Marine/ Mechanical	3	1	--	03	40	60	100	3
3	PCC	18MR33	Basic Thermodynamics	Marine/ Mechanical	3	1	--	03	40	60	100	3
4	PCC	18MR34	Mechanics of Materials	Marine/ Mechanical	3	1	--	03	40	60	100	3
5	PCC	18MR35	Elementary Navigation Seamanship and Survival at Sea	Marine	3	--	--	03	40	60	100	3
6	PCC	18MR36	Mechanical Measurements and Metrology	Marine/ Mechanical	3	--	--	03	40	60	100	3
7	PCC	18MRL37	Material Testing Lab	Marine/ Mechanical	--	1	2	03	40	60	100	2
8	PCC	18MRL38	Mechanical Measurements and Meteorology Lab	Marine/ Mechanical	--	1	2	03	40	60	100	2
9	HSMC	18KVK39/49	Vyavaharika Kannada (Kannada for communication)	HSMC	-	2	-	--	100	--	100	1
		18KAK39/49	Aadalitha Kannada (Kannada for Administration)		-	-	-	--	--			
		<b>OR</b>										
		18CPC39/49	Constitution of India, Professional Ethics and Cyber Law		1	--	--	02	40	60		
<b>TOTAL</b>					<b>17</b>	<b>07</b>		<b>24</b>	<b>420</b>	<b>480</b>	<b>900</b>	<b>23</b>
					<b>OR</b>	<b>OR</b>	<b>04</b>	<b>OR</b>	<b>OR</b>	<b>OR</b>		
					<b>18</b>	<b>09</b>		<b>26</b>	<b>360</b>	<b>540</b>		

**Course prescribed to lateral entry Diploma holders admitted to III semester of Engineering programs**

10	18MATDIP31	NMC	Advance Mathematics - I	Mathematics	3	--	--	03	40	60	100	0
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(a)The mandatory non – credit courses Advance Mathematics- I and II prescribed at III and IV semesters respectively, to lateral entry Diploma holders admitted to III semester of BE/B.Tech programs shall compulsorily be registered during respective semesters to complete all the formalities of the course and appear for University examination.

(b)The mandatory non – credit courses Advance Mathematics I and II, prescribed to lateral entrant Diploma holders admitted to III semester of BE/B.Tech programs, are to be completed to secure eligibility to VII semester. However, they are not considered for vertical progression from II year to III year of the programme.

**Note: BS: Basic Science, PC: Professional core. Hu: Humanities, NMC: Non-credit mandatory course.**

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**IVSEMESTER**

Sl. No	Course and Course code		Course Title	Teaching Department	Teaching Hours /Week			Examination			Credits	
					Theory	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks		Total Marks
1	BSC	18MAT41	Complex Analysis, Probability and Statistical Methods	Mathematics	2	2	--	03	40	60	100	3
2	PCC	18MR42	Theory of Machines	Marine/ Mechanical	3	1	--	03	40	60	100	3
3	PCC	18MR43	Applied Thermodynamics	Marine/ Mechanical	3	2	--	03	40	60	100	4
4	PCC	18MR44	Ship Structure and Construction	Marine	3	--	--	03	40	60	100	3
5	PCC	18MR45	Marine Heat Engine and Air Conditioning	Marine/ Mechanical	3	1	--	03	40	60	100	3
6	PCC	18MR46	Fluid Mechanics	Marine/ Mechanical	3	1	--	03	40	60	100	3
7	PCC	18MRL47	Machine Shop and Foundry Lab	Marine/ Mechanical	--	1	2	03	40	60	100	2
8	PCC	18MRL48	Computer Aided Marine Engineering Drawing	Marine/ Mechanical	1	--	4	03	40	60	100	3
9	HSMC	18KVK39/49	Vyavaharika Kannada (Kannada for communication)	HSMC	--	2	-	--	100	--	100	1
		18KAK39/49	Aadalitha Kannada (Kannada for Administration)									
		<b>OR</b>										
		18CPC39/49	Constitution of India, Professional Ethics and Cyber Law		1	--	--	02	40	60		
<b>TOTAL</b>					<b>18</b>	<b>08</b>		<b>24</b>	<b>420</b>	<b>480</b>		
					<b>OR</b>	<b>OR</b>	<b>06</b>	<b>OR</b>	<b>OR</b>	<b>OR</b>	<b>900</b>	<b>25</b>
					<b>19</b>	<b>10</b>		<b>26</b>	<b>360</b>	<b>540</b>		

**Course prescribed to lateral entry Diploma holders admitted to III semester of Engineering programs**

10	18MATDIP41	NCMC	Advance Mathematics - II	Mathematics	3	--	--	03	40	60	100	0
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(a) The mandatory non – credit courses Advance Mathematics-I and II prescribed at III and IV semesters respectively, to lateral entrant Diploma holders admitted to III semester of BE/B.Tech programs shall compulsorily be registered during respective semesters to complete all the formalities of the course and appear for University examination.

(b) The mandatory non – credit courses Advance Mathematics I and II, prescribed to lateral entrant Diploma holders admitted to III semester of BE/B.Tech programs, are to be completed to secure eligibility to VII semester. However, they are not considered for vertical progression from II year to III year of the programme.

**Note: BS: Basic Science, PC: Professional core, Hu: Humanities, NCMC: Non-credit mandatory course.**

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<b>V SEMESTER</b>												
Sl. No	Course and Course code		Course Title	Teaching Department	Teaching Hours /Week			Examination			Credits	
					Theory	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks		Total Marks
1	HSMC	18MR51	Management and Entrepreneurship	HSMC	2	1	--	03	40	60	100	3
2	PCC	18MR52	Naval Architecture	Marine	3	1	--	03	40	60	100	4
3	PCC	18MR53	Marine Internal Combustion Engine-I	Marine	3	--	--	03	40	60	100	3
4	PCC	18MR54	Marine Auxiliary Machines	Marine	3	1	--	03	40	60	100	4
5	PCC	18MR55	Turbo Machines	Marine/ Mechanical	3	2	--	03	40	60	100	4
6	PCC	18MR56	Marine Boilers	Marine	3	--	--	03	40	60	100	3
7	PCC	18MRL57	Marine Engine Lab	Marine/ Mechanical	--	1	2	03	40	60	100	2
8	PCC	18MRL58	Fluid Mechanics and Machines Lab	Marine/ Mechanical	--	1	2	03	40	60	100	2
9	HSMC	18CIV59	Environmental Studies	Civil/ Environmental [Paper setting: Civil Engineering Board]	2	--	--	--	--	--	--	0
<b>TOTAL</b>					<b>19</b>	<b>07</b>	<b>04</b>	<b>24</b>	<b>320</b>	<b>480</b>	<b>800</b>	<b>25</b>
<p><b>Mini-project:</b> To be carried out during the intervening vacations of V and VI semesters. The University examination will be conducted during VI semester. The credit prescribed for mini – project is added to VI semester credits. The mini-project is considered as a head of passing and is considered for the award of degree. Those, who do not take-up/complete the mini-project will be declared as failed and have to complete during subsequent University examination after satisfy the internship requirements. Also, mini-project is considered for eligibility to VII semester.</p> <p><b>Note: Hu: Humanities, PC: Professional core, NCMC: Non-credit mandatory course.</b></p>												

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**VI SEMESTER**

Sl. No	Course and Course code		Course Title	Teaching Department	Teaching Hours /Week			Examination				Credits
					Theory	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Marks	Total Marks	
1	PCC	18MR61	Heat Transfer	Marine/ Mechanical	3	2	--	03	40	60	100	4
2	PCC	18MR62	Marine Internal Combustion Engine-II	Marine	3	1	--	03	40	60	100	4
3	PCC	18MR63	Marine Electrical Technology	Marine	3	1	--	03	40	60	100	4
4	PEC	18MR64X	Professional Elective -I	Marine/ Mechanical	3	--	--	03	40	60	100	3
5	OEC	18MR65X	Open Elective-A	Marine/ Mechanical	3	--	--	03	40	60	100	3
6	PCC	18MRL66	Heat transfer Lab	Marine/ Mechanical	--	1	2	03	40	60	100	2
7	PCC	18MRL67	Marine Electrical Lab	Marine/ Mechanical	--	1	2	03	40	60	100	2
8	MP	18MRMP68	Mini-project	(Completed during the intervening vacations of V and VI semesters)				03	40	60	100	2
9	INT	18MRMI69	Internship	(To be carried out during the intervening vacations of VI and VII semesters )				--	--	--	--	--
<b>TOTAL</b>					<b>15</b>	<b>05</b>	<b>04</b>	<b>24</b>	<b>320</b>	<b>480</b>	<b>800</b>	<b>24</b>

**Note: PC: Professional core, PE: Professional Elective, OE: Open Elective, MP: Mini-project, INT: Internship.**

**Internship:** All the students admitted to III year of BE/B.Tech have to undergo mandatory internship of 4 weeks during the vacations of VI and VII semesters and /or VII and VIII semesters. A University examination will be conducted during VIII semester and prescribed credit are added to VIII semester. Internship is considered as a head of passing and is considered for the award of degree. Those, who do not take-up/complete the internship will be declared as failed and have to complete during subsequent University examination after satisfy the internship requirements.

**Electives**

Course code	Professional Electives - I
18MR641	Advanced Marine Technology
18MR642	Control Engineering
18MR643	Mechanics of Composite Material
18MR644	Design of Machine Elements
Course code	Open Elective -A
18MR651	Automation and Industrial Robotics
18MR652	Non Traditional Machining
18MR653	Energy Engineering
18MR654	Micro and Smart Technology

Students can select any one of the open electives (Please refer to consolidated list of VTU for open electives) offered by any Department. Candidate may be offered with an open elective,

- If the candidate has not studied the same course during the earlier courses of the program.
- The syllabus content of open elective is not similar to that of Departmental core courses or professional electives.
- A similar course, under any category, is not prescribed in the higher semesters of the programme.
- Registration to electives shall be documented under the guidance of Programme Coordinator/ Adviser/Mentor.

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**VII SEMESTER**

Sl. No	Course and Course code		Course Title	Teaching Department	Teaching Hours /Week			Examination				Credits	
					Theory	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SSEE Theory/ Practical Marks	Total Marks		
1	PCC	18MR71	Mechanical Vibrations	Marine/ Mechanical	3	1	--	03	40	60	100	3	
2	PCC	18MR72	Advanced Marine Auxiliary Machines	Marine	3	--	--	03	40	60	100	3	
3	PEC	18MR73X	Professional Elective-II	Marine/ Mechanical	3	--	--	03	40	60	100	3	
4	PEC	18MR74X	Professional Elective-III	Marine/ Mechanical	3	--	--	03	40	60	100	3	
5	OEC	18MR75X	Open Elective-B	Marine/ Mechanical	3	--	--	03	40	60	100	3	
6	PCC	18MRL76	Vibration Lab	Marine/ Mechanical	--	1	2	03	40	60	100	2	
7	PCC	18MRL77	Simulation Lab	Marine/ Mechanical	--	1	2	03	40	60	100	2	
8	Project	18MRP78	Project Work Phase - 1		--	--	3	03	40	60	100	1	
9	INT	18MRI79	Internship	(If not completed after VI semester examinations, it has to be carried out during the intervening vacations of VII and VIII semesters )				--	--	--	--	--	--
<b>TOTAL</b>					<b>15</b>	<b>04</b>	<b>07</b>	<b>24</b>	<b>320</b>	<b>480</b>	<b>800</b>	<b>20</b>	

**Note: PC: Professional core, PE: Professional Elective, OE: Open Elective, MP: Mini-project, INT: Internship.**

**Internship:** All the students admitted to III year of BE/B.Tech have to undergo mandatory internship of 4 weeks during the vacations of VI and VII semesters and /or VII and VIII semesters. A University examination will be conducted during VIII semester and prescribed credit are added to VIII semester. Internship is considered as a head of passing and is considered for the award of degree. Those, who do not take-up/complete the internship will be declared as failed and have to complete during subsequent University examination after satisfy the internship requirements.

**Electives**

Course code	Professional Electives - II	Course code	Open Electives -B
18MR731	Ship Fire Prevention and Safety	18MR751	Operations Research
18MR732	Stability of Ships	18MR752	Energy and Environment
18MR733	Tribology	18MR753	Project Management
18MR734	Marine Corrosion and Prevention	18MR754	Mechatronics
		Students can select any one of the open electives (Please refer to consolidated list of VTU for open electives) offered by any Department. Candidate may be offered with an open elective, <ul style="list-style-type: none"> <li>• If the candidate has not studied the same course during the earlier courses of the program.</li> <li>• The syllabus content of open elective is not similar to that of Departmental core courses or professional electives.</li> <li>• A similar course, under any category, is not prescribed in the higher semesters of the programme.</li> <li>• Registration to electives shall be documented under the guidance of Programme Coordinator/ Adviser/Mentor.</li> </ul>	
Course code	Professional Electives -III		
18MR741	Shipping Practice		
18MR742	Hydraulics and Pneumatics		
18MR743	Marine Machinery and System Design		
18MR744	Ship Recycling		

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**VIII SEMESTER**

Sl. No	Course and Course code		Course Title	Teaching Department	Teaching Hours /Week			Examination				Credits
					Theory	Tutorial	Practical/ Drawing	Duration in hours	CIE Marks	SEE Theory/ Practical Marks	Total Marks	
1	PCC	18MR81	Engine Room Management	Marine	3	1	--	03	40	60	100	3
2	PEC	18MR82X	Professional Elective-IV	Marine/ Mechanical	3	--	--	03	40	60	100	3
3	Project	18MRP83	Project Work Phase - 2		--	--	3	03	40	60	100	8
4	Seminar	18MRS84	Technical Seminar		--	--	3	03	40	60	100	1
5	INT	18MRI85	Internship	(Completed during the intervening vacations of VI and VII semesters and /or VII and VIII semesters.)				03	40	60	100	3
<b>TOTAL</b>					<b>06</b>	<b>01</b>	<b>06</b>	<b>15</b>	<b>200</b>	<b>300</b>	<b>500</b>	<b>18</b>

**Note: PC: Professional core, PE: Professional Elective, OE: Open Elective, MP: Mini-project, INT: Internship.**

**Electives**

Course code	Professional Electives - IV
18MR821	Marine Engine Practice
18MR822	Steam Engineering
18MR823	Shipping Trade
18MR824	Transport and Logistics Management