

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI**  
**CHOICE BASED CREDIT SYSTEM (CBCS)**  
**SCHEME OF TEACHING AND EXAMINATION 2015-2016 (APPROVED)**  
**B.E. Medical Electronics**

**V SEMESTER**

Sl. No	Subject Code	Title	Teaching Dept.	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15ES51	Management and Entrepreneurship Development	ML	04	-	03	80	20	100	4
2	15ML52	Control Systems	ML	04	-	03	80	20	100	4
3	15ML53	Digital Signal Processing	ML	04	-	03	80	20	100	4
4	15ML54	Diagnostic and Therapeutic Equipment's	ML	04	-	03	80	20	100	4
5	15ML55X	Professional Elective-I	ML	03	-	03	80	20	100	3
6	15ML56X	Open Elective-I	ML	03	-	03	80	20	100	3
7	15MLL57	Signal Conditioning Circuits and Data Acquisition Lab	ML	-	1I+2P	03	80	20	100	2
8	15MLL58	Diagnostic and Therapeutic Equipment's Lab	ML	-	1I+2P	03	80	20	100	2
<b>TOTAL</b>				<b>22</b>	<b>06</b>	<b>24</b>	<b>640</b>	<b>160</b>	<b>800</b>	<b>26</b>

Professional Elective-I		Open Elective-I	
15ML551	VLSI Design	15ML561	Computer Organization
15ML552	Rehabilitation Engineering	15ML562	Virtual Bio-Instrumentation
15ML553	Hospital Design, Planning and Management	15ML563	Medical Electronics Design
15ML554	Biomedical Nanotechnology	15ML564	Pharmacology and Drug Delivery

15NC565	Essentials of NCC (common to all branches of Engg)
15CS561	Mobile Development Application (common to all branches of Engg)

- 1. Core Subject:** This is the course which is compulsorily need to be studied by the student as a core requirement to complete the requirement of a programme in a said discipline of study.
- 2. Professional Elective:** Elective relevant to chosen specialization / branch
- 3. Open Elective:** Electives from other technical and/or emerging subject areas.

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**VI SEMESTER**

Sl. No	Subject Code	Title	Teaching Dept.	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration	Theory/ Practical Marks	I.A. Marks	Total Marks	
1	15ML61	Analog and Digital Communication Systems	ML	04	-	03	80	20	100	4
2	15ML62	Medical Image Processing	ML	04	-	03	80	20	100	4
3	15ML63	OOPs with C++	ML	04	-	03	80	20	100	4
4	15ML64	Medical Physics	ML	04	-	03	80	20	100	4
5	15ML65X	Professional Elective-II	ML	03	-	03	80	20	100	3
6	15ML66X	Open Elective-II	ML	03	-	03	80	20	100	3
7	15MLL67	Medical Image Processing Lab	ML	-	1I+2P	03	80	20	100	2
8	15MLL68	OOPs with C++ Lab	ML	-	1I+2P	03	80	20	100	2
<b>TOTAL</b>				<b>22</b>	<b>6</b>	<b>24</b>	<b>640</b>	<b>160</b>	<b>800</b>	<b>26</b>

Professional Elective-II		Open Elective-II	
15ML651	Biosensors and Smart Sensors	15ML661	Mobile Communication
15ML652	Physiological System Modeling	15ML662	Embedded Real Time Systems
15ML653	Bioinformatics	15ML663	Embedded System Design and Programming
15ML654	Biomechanics and Biodynamics	15ML664	Biomaterials and Artificial Organs

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**VII SEMESTER**

Sl. No	Subject Code	Title	Teaching Dept.	Teaching Hours /Week		Examination				Credits
				Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15ML71	Biomedical Digital Signal Processing	ML	04	-	03	20	80	100	4
2	15ML72	Computer Communication and Healthcare Networks	ML	04	-	03	20	80	100	4
3	15ML73	ARM Processor	ML	04	-	03	20	80	100	4
4	15ML74X	Professional Elective-III	ML	03	-	03	20	80	100	3
5	15ML75X	Professional Elective-IV	ML	03	-	03	20	80	100	3
6	15MLL76	Biomedical DSP Lab	ML	-	1I+2P	03	20	80	100	2
7	15MLL77	ARM Processor Lab	ML	-	1I+2P	03	20	80	100	2
8	15MLP78	Project Work Phase-I + Project Seminar	ML	-	1I+2P	-	100	-	100	2
<b>TOTAL</b>				<b>18</b>	<b>9</b>	<b>21</b>	<b>240</b>	<b>560</b>	<b>800</b>	<b>24</b>

Professional Elective-III		Professional Elective-IV	
15ML741	Database Management System in Healthcare	15ML751	Biostatistics
15ML742	Medical Informatics and Expert Systems	15ML752	Lasers and Optical Fibers in Medicine
15ML743	Low Power VLSI Design	15ML753	Ergonomics
15ML744	Biometric Systems	15ML754	Big-data and Cloud Computing

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- 2. Professional Elective:** Elective relevant to chosen specialization/ branch
- 3. Project Work Phase-I + Project Seminar:** Literature Survey, Problem Identification, Objectives & Methodology, Submission of synopsis & seminar presentation

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**VIII SEMESTER**

Sl. No	Subject Code	Title	Teaching Dept.	Teaching Hours /Week		Examination				Credit
				Theory	Practical/ Drawing	Duration	I.A. Marks	Theory/ Practical Marks	Total Marks	
1	15ML81	Medical Imaging Systems	ML	4	-	3	20	80	100	4
2	15ML82X	Neural Networks and AI in Biomedical Engineering	ML	4	-	3	20	80	100	4
3	15ML83X	Professional Elective-V	ML	3	-	3	20	80	100	3
4	15ML84	Internship / Professional Practice	ML	Industry Oriented		3	50	50	100	2
5	15MLP85	Project Work Phase-II	ML	-	6	3	100	100	200	6
6	15MLS86	Seminar	ML	-	4	-	100	-	100	1
<b>TOTAL</b>				<b>11</b>	<b>10</b>	<b>15</b>	<b>310</b>	<b>390</b>	<b>700</b>	<b>20</b>

<b>Professional Elective-V</b>	
15ML831	Bio-MEMS
15ML832	Medical Device Regulations
15ML833	Picture Archiving and Communication Systems
15ML834	Programmable System on Chip (PSoC)

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- 2. Professional Elective:** Elective relevant to chosen specialization/ branch.
- 3. Internship / Professional Practice:** To be carried between the 6<sup>th</sup> and 7<sup>th</sup> semester vacation or 7<sup>th</sup> and 8<sup>th</sup> semester vacation period.
- 4. Project Work Phase –II:** Design, Development, Implementation, Demonstration, Testing, Presentation and Project Report Submission.
- 5. Seminar:** On current topics of Engineering & Technology related to said discipline of study. Preparation of Seminar Report and Presentation.