

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI**  
**CHOICE BASED CREDIT SYSTEM (CBCS)**  
**SCHEME OF TEACHING AND EXAMINATION 2015-2016**

**B.E. Biomedical Engineering**

**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	15AL51	Management and Entrepreneurship	BM	04	-	03	80	20	100	4
2	15BM52	Fundamentals of Signals & DSP	BM	04	-	03	80	20	100	4
3	15BM53	Clinical Instrumentation-I	BM	04	-	03	80	20	100	4
4	15BM54	Biomedical Equipment's	BM	04	-	03	80	20	100	4
5	15BM55X	Professional Elective-I	BM	03	-	03	80	20	100	3
6	15BM56X	Open Elective-I	BM	03	-	03	80	20	100	3
7	15BML57	Signal Conditioning Circuits and Data Acquisition Lab	BM	-	1I+2P	03	80	20	100	2
8	15BML58	Clinical Instrumentation Lab	BM	-	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	
15BM551	VLSI Design	15BM561	Computer Organization
15BM552	Rehabilitation Engineering	15BM562	Virtual Bio-Instrumentation
15BM553	Hospital Design, Planning and Management	15BM563	Medical Physics
15BM554	Biomedical Nanotechnology	15BM564	Operating Systems with Linux

- 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	15BM61	Analog and Digital Communication Systems	BM	04	-	03	80	20	100	4
2	15BM62	Medical Image Processing	BM	04	-	03	80	20	100	4
3	15BM63	OOPs with C++	BM	04	-	03	80	20	100	4
4	15BM64	Clinical Instrumentation-II	BM	04	-	03	80	20	100	4
5	15BM65X	Professional Elective-II	BM	03	-	03	80	20	100	3
6	15BM66X	Open Elective-II	BM	03	-	03	80	20	100	3
7	15BML67	Medical Image Processing Lab	BM	-	1I+2P	03	80	20	100	2
8	15BML68	OOPs with C++Lab	BM	-	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	
15BM651	Biosensors and Smart Sensors	15BM661	Mobile Communication
15BM652	Distributed Sensor Networks	15BM662	Software Engineering
15BM653	Bioinformatics	15BM663	Embedded System Design and Programming
15BM654	Biomechanics and Biodynamics	15BM664	Statistics and Numerical Methods

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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	15BM71	Biomedical Digital Signal Processing	BM	04	-	03	20	80	100	4
2	15BM72	Computer Communication Networks in Healthcare	BM	04	-	03	20	80	100	4
3	15BM73	ARM Processor	BM	04	-	03	20	80	100	4
4	15BM74X	Professional Elective-III	BM	03	-	03	20	80	100	3
5	15BM75X	Professional Elective-IV	BM	03	-	03	20	80	100	3
6	15BML76	Biomedical DSP Lab	BM	-	1I+2P	03	20	80	100	2
7	15BML77	ARM Processor Lab	BM	-	1I+2P	03	20	80	100	2
8	15BMP78	Project Work Phase-I + Seminar	BM	-	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	
15BM741	Database Management System in Healthcare	15BM751	Biostatistics
15BM742	Medical Informatics and Expert Systems	15BM752	Lasers and Optical Fibers in Medicine
15BM743	Hardware-Software Co-design	15BM753	Ergonomics
15BM744	Biometric Systems	15BM754	Big-data and Cloud Computing

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**2. Professional Elective:** Elective relevant to chosen specialization/ branch

**3. Project Work Phase –I + Seminar:** Literature Survey, Problem Identification, Objectives and Methodology, Submission of synopsis and 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	15BM81	Medical Imaging Systems	BM	4	-	3	20	80	100	4
2	15BM82	Biomaterials and Artificial Organs	BM	4	-	3	20	80	100	4
3	15BM83X	Professional Elective-V	BM	3	-	3	20	80	100	3
4	15BM84	Internship / Professional Practice	BM	Industry Oriented		3	50	50	100	2
5	15BMP85	Project Work Phase-II	BM	-	6	3	100	100	200	6
6	15BMS86	Seminar	BM	-	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>	
15BM831	Bio-MEMS
15BM832	Medical Device Regulations
15BM833	Picture Archiving and Communication Systems
15BM834	Neural Networks and AI in Biomedical Engg.

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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.