



**Hindusthan College of Engineering and Technology  
Coimbatore 641 032**

**NAAC  
SSR  
Cycle 2**

**Criterion II  
Teaching-Learning and Evaluation**

**PRACTICAL LEARNING EXPOSURE**

Practical Learning Exposure hands-on laboratory experiments make learning easier. The following are the list of Practical Learning Courses from the academic year 2017-18 to 2021-22.



**Principal**

**PRINCIPAL**  
Hindusthan College of Engineering & Technology  
COIMBATORE - 641 032

Criterion II  
Teaching-Learning and Evaluation

**BE Aeronautical Engineering**

REGULATION-2019 (Revised on July 2021)

(For the students admitted during the academic year 2021-2025 and onwards)

**LIST OF PRACTICAL COURSES**

SEMESTER I

S.No.	Course Code	Course Title	Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	21HE1101	Technical English	HS	2	1	0	3	25	75	100
2	21MA1102	Calculus and Linear Algebra	BS	3	1	0	4	25	75	100
<b>THEORY WITH LAB COMPONENT</b>										
3	21PH1151	Applied Physics	BS	2	0	2	3	50	50	100
4	21CY1151	Chemistry for Engineers	BS	2	0	2	3	50	50	100
5	21CS1151	Python Programming and Practices	ES	2	0	2	3	50	50	100
6	21ME1152	Engineering Drawing	ES	1	0	4	3	50	50	100
<b>PRACTICAL</b>										
7	21HE1071	Language Competency Enhancement Course-I	HS	0	0	2	1	100	0	100
<b>MANDATORY COURSES</b>										
8	21HE1072	Career Guidance Level - I Personality, Aptitude and Career Development	EEC	2	0	0	0	100	0	100
9	21HE1073	Entrepreneurship & Innovation	EEC	1	0	0	0	100	0	100
<b>Total</b>				<b>15</b>	<b>2</b>	<b>12</b>	<b>20</b>	<b>550</b>	<b>350</b>	<b>900</b>

SEMESTER II

S.No.	Course Code	Course Title	Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	21HE2101	Business English for Engineers	HS	2	1	0	3	25	75	100
2	21MA2101	Differential Equations and Complex Variables	BS	3	1	0	4	25	75	100
3	21EE2103	Basics of Electrical and Electronics Engineering	ES	3	0	0	3	25	75	100
4	21ME2101	Engineering Mechanics	ES	3	0	0	3	25	75	100
<b>THEORY WITH LAB COMPONENT</b>										
5	21PH2151	Material Science	BS	2	0	2	3	50	50	100
6	21CY2151	Environmental Studies	BS	2	0	2	3	50	50	100
<b>PRACTICAL</b>										



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7	21ME2001	Engineering Practices Laboratory	ES	0	0	4	2	50	50	100
8	21HE2071	Language Competency Enhancement Course-II	HS	0	0	2	1	100	0	100
<b>MANDATORY COURSES</b>										
9	21HE2072	Career Guidance Level – II Personality, Aptitude and Career development	EEC	2	0	0	0	100	0	100
<b>Total:</b>				<b>17</b>	<b>2</b>	<b>10</b>	<b>22</b>	<b>450</b>	<b>450</b>	<b>900</b>

SEMESTER III

S.No	Course Code	Course Title	Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	21MA3103	Fourier Analysis and Numerical Methods	BS	3	1	0	4	25	75	100
2	21AE3201	Elements of Aeronautics	PC	3	1	0	4	25	75	100
3	21AE3202	Engineering Fluid Mechanics	PC	3	0	0	3	25	75	100
4	21AE3203	Solid Mechanics	PC	3	0	0	3	25	75	100
<b>THEORY WITH LAB COMPONENT</b>										
5	21AE3251	Aero Engineering Thermodynamics	PC	2	0	2	3	50	50	100
<b>PRACTICAL</b>										
6	21AE3001	Aircraft Component Drawing Laboratory	PC	0	0	3	1.5	50	50	100
7	21AE3002	Fluid mechanics and Solid mechanics Laboratory	PC	0	0	3	1.5	50	50	100
<b>MANDATORY COURSES</b>										
8	21MC3191	Indian Constitution	MC	2	0	0	0	100	0	100
9	21HE3072	Career Guidance Level – III Personality, Aptitude and Career Development	EEC	2	0	0	0	100	0	100
10	21HE3073	Leadership Management Skills	EEC	1	0	0	0	100	0	100
<b>Total</b>				<b>19</b>	<b>2</b>	<b>8</b>	<b>20</b>	<b>550</b>	<b>450</b>	<b>1000</b>

SEMESTER IV

S.No	Course Code	Course Title	Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	21MA4101	Numerical Methods	BS	3	1	0	4	25	75	100
2	21AE4201	Aerodynamics	PC	3	1	0	4	25	75	100
3	21AE4202	Gas Turbine Propulsion	PC	3	0	0	3	25	75	100
4	21AE4203	Mechanics of Machines	PC	3	0	0	3	25	75	100
<b>THEORY WITH LAB COMPONENT</b>										
5	21AE4251	Aircraft Structures - I	PC	3	0	2	4	50	50	100
<b>PRACTICAL</b>										



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6	21AE4001	Aerodynamics Laboratory	PC	0	0	3	1.5	50	50	100
7	21AE4002	Propulsion Laboratory	PC	0	0	3	1.5	50	50	100
<b>MANDATORY COURSES</b>										
8	21MC4191	Essence of Indian tradition knowledge/Value Education	MC	2	0	0	0	100	0	100
9	21HE4072	Career Guidance Level - IV Personality, Aptitude and Career Development	EEC	2	0	0	0	100	0	100
<b>Total</b>				<b>19</b>	<b>2</b>	<b>8</b>	<b>21</b>	<b>450</b>	<b>450</b>	<b>900</b>

**SEMESTER V**

S.No.	Course Code	Course Title	Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	21AE5201	Advanced Propulsion	PC	3	0	0	3	25	75	100
2	21AE5202	Aircraft Structures - II	PC	3	0	0	3	25	75	100
3	21AE5203	Flight Dynamics	PC	3	1	0	4	25	75	100
4	21AE5204	High Speed Aerodynamics	PC	3	0	0	3	25	75	100
5	21AE53XX	Professional Elective -I	PE	3	0	0	3	25	75	100
<b>THEORY WITH LAB COMPONENT</b>										
6	21AE5251	Aircraft Systems and General Maintenance Practices	PC	2	0	2	3	50	50	100
<b>PRACTICALS</b>										
7	21AE5001	UAV design and Aeromodelling Laboratory	PC	0	0	3	1.5	50	50	100
8	21AE5002	Aircraft Structures Laboratory -II	PC	0	0	3	1.5	50	50	100
<b>MANDATORY COURSES</b>										
9	21HE5071	Soft Skills - I	EEC	1	0	0	1	100	0	100
10	21HE5072	Design Thinking	EEC	1	0	0	1	100	0	100
<b>Total</b>				<b>19</b>	<b>3</b>	<b>8</b>	<b>24</b>	<b>475</b>	<b>525</b>	<b>1000</b>

**SEMESTER VI**

S.No.	Course Code	Course Title	Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	21AE6201	Finite Element Methods in Engineering	PC	3	0	0	3	25	75	100
2	21AE6202	Composite Materials and Structures	PC	3	0	0	3	25	75	100
3	21AE6203	Heat Transfer	PC	3	0	0	3	25	75	100
4	21AE6181	Total Quality Management	HS	3	0	0	3	25	75	100
5	21AE63XX	Professional Elective - II	PE	3	0	0	3	25	75	100
6	21XX64XX	Open Elective- I	OE	3	0	0	3	25	75	100
<b>PRACTICALS</b>										
7	21AE6001	Structural Simulation Laboratory	PC	0	0	3	1.5	50	50	100





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8	21AE6002	Aero Engine and Airframe Laboratory	PC	0	0	3	1.5	50	50	100
<b>MANDATORY COURSES</b>										
9	21AE6701	Internship / Industrial Training	EEC	0	0	0	1	100	0	100
10	21HE6071	Soft Skills - II	EEC	1	0	0	1	100	0	100
11	21HE6072	Intellectual Property Rights (IPR)	EEC	1	0	0	1	100	0	100
<b>Total</b>				<b>20</b>	<b>0</b>	<b>6</b>	<b>24</b>	<b>550</b>	<b>550</b>	<b>1100</b>

**SEMESTER VII**

S.No.	Course Code	Course Title	Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	21AE7201	Computational Fluid Dynamics	PC	3	0	0	3	25	75	100
2	21AE7202	Vibrations and Elements of Aero Elasticity	PC	3	0	0	3	25	75	100
3	21AE73XX	<b>Professional Elective-III</b>	PE	3	0	0	3	25	75	100
4	21XX74XX	<b>Open Elective - II</b>	OE	3	0	0	3	25	75	100
<b>THEORY WITH LAB COMPONENT</b>										
5	21AE7251	Avionics	PC	2	0	2	3	50	50	100
<b>PRACTICALS</b>										
6	21AE7001	Aircraft Design Project	PC	0	0	3	1.5	50	50	100
7	21AE7002	Flow Simulation Laboratory	PC	0	0	3	1.5	50	50	100
<b>PROJECT WORK</b>										
8	21AE7901	Project Work - Phase I	EEC	0	0	4	2	50	50	100
<b>Total</b>				<b>14</b>	<b>0</b>	<b>12</b>	<b>20</b>	<b>300</b>	<b>500</b>	<b>800</b>

**SEMESTER VIII**

S.No.	Course Code	Course Title	Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	21AE83XX	<b>Professional Elective -IV</b>	PE	3	0	0	3	25	75	100
2	21AE83XX	<b>Professional Elective- V</b>	PE	3	0	0	3	25	75	100
<b>PROJECT WORK</b>										
3	21AE8901	Project Work - Phase II	EEC	0	0	16	8	100	100	200
<b>Total</b>				<b>6</b>	<b>0</b>	<b>16</b>	<b>14</b>	<b>150</b>	<b>250</b>	<b>400</b>



Criterion II  
Teaching-Learning and Evaluation

**List of Laboratories:**

Aerodynamics Laboratory  
CAD Laboratory  
Propulsion Laboratory  
Aircraft Structures Laboratory  
Aircraft Maintenance and Overhauling Laboratory  
Aircraft Systems Laboratory  
UAV and Aeromodelling Laboratory



**Aerodynamics Laboratory**





Criterion II  
Teaching-Learning and Evaluation



Aircraft Systems Laboratory



Propulsion Laboratory





Criterion II  
Teaching-Learning and Evaluation



Aircraft Maintenance and Overhauling Laboratory



Aircraft Systems Laboratory



Criterion II  
Teaching-Learning and Evaluation



UAV and Aeromodelling Laboratory



  
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Criterion II  
Teaching-Learning and Evaluation

**B.Tech. Agricultural Engineering**

(For the students admitted during the academic year 2019-2023 and onwards)

**LIST OF PRACTICAL COURSES**

**SEMESTER I**

S.No.	Course Code	Course Title	Category	L	T	P	C	CIA	ESE	TOTAL				
<b>THEORY</b>														
1	19HE1101	Technical English	HS	3	0	0	3	25	75	100				
2	19MA1102	Calculus and Linear Algebra	BS	3	1	0	4	25	75	100				
3	19ME1101	Basics of Civil and Mechanical Engineering	ES	3	0	0	3	25	75	100				
<b>THEORY WITH LAB COMPONENT</b>														
4	19PH1151	Applied Physics	BS	2	0	2	3	50	50	100				
5	19CY1151	Chemistry for Engineers	BS	2	0	2	3	50	50	100				
6	19CS1151	Python programming and practices	ES	2	0	2	3	50	50	100				
<b>PRACTICAL</b>														
7	19HE1001	Language competency enhancement course - I	HS	0	0	1	1	100	-	100				
				<b>Total :</b>				<b>15</b>	<b>1</b>	<b>7</b>	<b>20</b>			<b>700</b>

As per AICTE 3 weeks Induction programme is Added in the First Semester as an Audit Course

**SEMESTER II**

S.No.	Course Code	Course Title	Category	L	T	P	C	CIA	ESE	TOTAL				
<b>THEORY</b>														
1	19HE2101	Business English for Engineers	HS	3	0	0	3	25	75	100				
2	19MA2101	Differential Equations and Complex Variables	BS	3	1	0	4	25	75	100				
3	19AG2104	Principles of Food Science	ES	3	0	0	3	25	75	100				
<b>THEORY WITH LAB COMPONENT</b>														
4	19PH2151	Material Science	BS	2	0	2	3	50	50	100				
5	19CY2151	Environmental studies	BS	2	0	2	3	50	50	100				
6	19IT2151	Programming in C	ES	2	0	2	3	50	50	100				
<b>PRACTICAL</b>														
7	19ME2001	Engineering Practices	ES	0	0	4	2	50	50	100				
8	19HE2001	Language Competency Enhancement Course-II	HS	0	0	1	1	100	-	100				
				<b>Total :</b>				<b>15</b>	<b>1</b>	<b>11</b>	<b>22</b>	<b>375</b>	<b>425</b>	<b>800</b>





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SEMESTER III

S.No	Course Code	Course Title	Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19MA3102	Fourier Analysis and Transforms	BS	3	1	0	4	25	75	100
2	19AG3201	Soil Science and Engineering	PC	3	0	0	3	25	75	100
3	19AG3202	Fluid Mechanics and Hydraulics	PC	3	1	0	4	25	75	100
4	19AG3203	Principles and practices of Crop Production	PC	3	0	0	3	25	75	100
<b>THEORY WITH LAB COMPONENT</b>										
5	19AG3251	Unit Operations in Agricultural Processing	PC	2	0	2	3	50	50	100
<b>PRACTICAL</b>										
6	19AG3001	Field Crop Production Practical	PC	0	0	3	1.5	50	50	100
7	19AG3002	Soil Science Laboratory	PC	0	0	3	1.5	50	50	100
<b>MANDATORY COURSES</b>										
8	19MC3191	Indian Constitution		2	0	0	0	100		100
<b>Total:</b>				<b>16</b>	<b>2</b>	<b>8</b>	<b>20</b>	<b>350</b>	<b>450</b>	<b>800</b>

SEMESTER IV

S.No	Course Code	Course Title	Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19AG4201	Farm Tractors	PC	2	1	0	3	25	75	100
2	19AG4202	Thermodynamics	PC	3	0	0	3	25	75	100
3	19AG4203	Irrigation and Drainage Engineering	PC	3	0	0	3	25	75	100
<b>THEORY WITH LAB COMPONENT</b>										
4	19MA4152	Statistics and Numerical Methods	BS	3	0	2	4	50	50	100
5	19AG4251	Bio-Energy Resource Technology	PC	2	0	2	3	50	50	100
6	19AG4252	Surveying and Leveling	PC	2	0	2	3	50	50	100
<b>PRACTICAL</b>										
7	19AG4001	Irrigation Field Laboratory	PC	0	0	4	2	50	50	100
<b>MANDATORY COURSES</b>										
8	19AC4191	Essence of Indian tradition knowledge/Value Education	AC	2	0	0	0	100		100
<b>Total</b>				<b>17</b>	<b>1</b>	<b>10</b>	<b>21</b>	<b>375</b>	<b>425</b>	<b>800</b>



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SEMESTER V

S.No.	Course Code	Course Title	Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19AG5201	Farm Machinery and Equipment	PC	3	0	0	3	25	75	100
2	19AG5202	Refrigeration and Cold Chain Management	PC	3	1	0	4	25	75	100
3	19AG5203	Theory of Machines	PC	3	0	0	3	25	75	100
4	19AG53XX	Professional Elective-I	PE	3	0	0	3	25	75	100
<b>THEORY WITH LAB COMPONENT</b>										
5	19AG5251	Groundwater and Well Engineering	PC	2	0	2	3	50	50	100
6	19AG5252	Soil and Water Conservation Engineering	PC	2	0	2	3	50	50	100
<b>PRACTICALS</b>										
7	19AG5001	Operation and Maintenance of Farm Machinery Laboratory	PC	0	0	3	1.5	50	50	100
8	19AG5002	CAD for Agricultural Engineering	PC	0	0	3	1.5	50	50	100
<b>MANDATORY COURSES</b>										
9	19HE5071	Soft Skills - I	EEC	1	0	0	1	25	75	100
10	19HE5072	Design Thinking	EEC	1	0	0	1	25	75	100
<b>Total</b>				<b>18</b>	<b>1</b>	<b>10</b>	<b>24</b>	<b>350</b>	<b>650</b>	<b>1000</b>

SEMESTER VI

S.No.	Course Code	Course Title	Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19AG6201	Hydrology and Water Resources Engineering	PC	3	0	0	3	25	75	100
2	19AG6202	Solar and Wind Energy Engineering	PC	3	1	0	4	25	75	100
3	19AG6181	Professional Ethics	HS	3	0	0	3	25	75	100
4	19AG63XX	Professional Elective-II	PE	3	0	0	3	25	75	100
5	19XX64XX	Open Elective-I	OE	3	0	0	3	25	75	100
<b>THEORY WITH LAB COMPONENTS</b>										
	19AG6251	Food and Dairy Engineering	PC	2	0	2	3	50	50	100
<b>PRACTICALS</b>										





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7	19AG6252	ICT in Agricultural Engineering	PC	0	0	4	2	50	50	100
8	19AG6701	Industrial Training	EEC	0	0	0	1	0	100	100
<b>MANDATORY COURSES</b>										
9	19HE6071	Soft Skills - II	EEC	1	0	0	1	25	75	100
10	19HE6072	Intellectual Property Rights (IPR)	EEC	1	0	0	1	25	75	100
<b>Total</b>				<b>19</b>	<b>1</b>	<b>6</b>	<b>24</b>	<b>275</b>	<b>725</b>	<b>1000</b>

SEMESTER VII

S.No.	Course Code	Course Title	Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19AGXXXX	Agricultural Extension	PC	3	0	0	3	25	75	100
2	19AGXXXX	Remote Sensing and Geographical Information System	PC	3	0	0	3	25	75	100
3	19AGXXXX	Professional Elective-III	PE	3	0	0	3	25	75	100
4	19AGXXXX	Open Elective-II	OE	3	0	0	3	25	75	100
<b>THEORY WITH LAB COMPONENT</b>										
5	19AGXXXX	Precision Farming and Protected Cultivation	PC	2	0	2	3	50	50	100
<b>PRACTICALS</b>										
6	19AGXXXX	Renewable Energy Laboratory	PC	0	0	3	1.5	50	50	100
7	19AGXXXX	GIS Laboratory for Agricultural Engineers	PC	0	0	3	1.5	50	50	100
<b>PROJECT WORK</b>										
8	19AGXXXX	Innovative Project	EEC	0	0	4	2	50	50	100
<b>Total</b>				<b>14</b>	<b>0</b>	<b>12</b>	<b>20</b>	<b>300</b>	<b>500</b>	<b>800</b>

SEMESTER VIII

S.No.	Course Code	Course Title	Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19AGXXXX	Professional Elective-IV	PE	3	0	0	3	25	75	100
2	19AGXXXX	Professional Elective-V	PE	3	0	0	3	25	75	100
<b>PROJECT WORK</b>										
3	19AGXXXX	Project work	EEC	0	0	16	8	100	100	200
<b>Total</b>				<b>6</b>	<b>0</b>	<b>16</b>	<b>14</b>	<b>150</b>	<b>250</b>	<b>400</b>





Criterion II  
Teaching-Learning and Evaluation

**List of Laboratories:**

- Crop Husbandry laboratory
- Farm machinery laboratory
- Soil and water conservation laboratory
- Post harvesting laboratory
- Bio energy laboratory



**Crop Husbandry laboratory**



Criterion II  
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Farm machinery laboratory



Soil and water conservation laboratory



Criterion II  
Teaching-Learning and Evaluation



Post harvesting laboratory



  
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**Criterion II  
Teaching-Learning and Evaluation**

**B.E. Automobile Engineering**

(For the students admitted during the academic year 2019-2023 and onwards)

**LIST OF PRACTICAL COURSES**

S.No	Course Code	Study Components and Course Title	Course Category	L	T	P	C	CIA	ESE	Total
<b>SEMESTER - I - 20 Credits</b>										
1	19HE1101	Technical English	HS	2	1	0	3	25	75	100
2	19MA1102	Calculus and Linear Algebra	BS	3	1	0	4	25	75	100
3	19PH1151	Applied Physics	BS	2	0	2	3	50	50	100
4	19CY1151	Chemistry for Engineers	BS	2	0	2	3	50	50	100
5	19CS1151	Python programming and practices	ES	2	0	2	3	50	50	100
6	19ME1152	Engineering Drawing	ES	1	0	4	3	50	50	100
7	19HE1071	Language Competency Enhancement Course - I	HS	0	0	2	1	100	-	100
8	19HE1072	Career Guidance Level - I Personality, Aptitude and Career Development	EEC	2	0	0	0	100	0	100
9	19HE1073	Entrepreneurship & Innovation	EEC	1	0	0	0	100	0	100
<b>Mandatory: 19MC1091-3 weeks Induction Program</b>										
<b>SEMESTER - II - 22 Credits</b>										
S.No	Course Code	Study Components and Course Title	Course Category	L	T	P	C	CIA	ESE	Total
1	19HE2101	Business English for Engineers	HS	2	1	0	3	25	75	100
2	19MA2101R	Differential Equations and Complex Variables	BS	3	1	0	4	25	75	100
3	19ME2101	Engineering Mechanics	ES	3	0	0	3	25	75	100
4	19PH2151	Material Science	BS	2	0	2	3	50	50	100
5	19CY2151	Environmental Science	BS	2	0	2	3	50	50	100
6	19IT2151	Programming in C	ES	2	0	2	3	50	50	100
7	19ME2001	Engineering Practices	ES	0	0	4	2	50	50	100
8	19HE2071	Language Competency Enhancement Course - II	HS	0	0	2	1	100	-	100



Criterion II  
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9.	19HE2072	Career Guidance Level – II Personality, Aptitude and Career Development	EEC	2	0	0	0	100	0	100
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SEMESTER III – 20 Credits

S.No	Course Code	Study Components and Course Title	Course Category	L	TP	C	CIA	ESE	Total
1	19MA3101	Fourier Series and Statistics	BS	3	10	4	25	75	100
2	19AU3201	Fluid and Pneumatic Systems	PC	3	10	4	25	75	100
3	19AU3202	Engineering Thermodynamics	PC	3	00	3	25	75	100
4	19AU3203	Theory of Automotive Engines	PC	3	00	3	25	75	100
5	19AU3251	Automotive Structures and Design	PC	2	02	3	50	50	100
6	19AU3001	Computer Aided Drawing Lab	PC	0	03	1.5	50	50	100
7	19AU3002	Automotive Components Lab	PC	0	03	1.5	50	50	100
8	19MC3191	Indian Constitution	MC	2	00	0	100	0	100

SEMESTER IV – 21 Credits

S.No	Course Code	Study Components and Course Title	Course Category	L	TP	C	CIA	ESE	Total
1	19MA4101	Numerical Methods	BS	3	10	4	25	75	100
2	19AU4201	Mechanism and Machine Theory	PC	3	10	4	25	75	100
3	19AU4202	Automotive Engine Components Design	PC	3	10	4	25	75	100
4	19AU4203	Two and Three Wheelers Technology	PC	3	00	3	25	75	100
5	19AU4251	Fundamentals of Heat Transfer	PC	2	02	3	50	50	100
6	19AU4001	Computer Aided Automotive Engine Components Lab	PC	0	03	1.5	50	50	100
	19AU4002	Two and Three Wheelers Technology Lab	PC	0	03	1.5	50	50	100
	19MC4191	Essence of Indian Traditional	MC	2	00	0	100	0	100





Criterion II  
Teaching-Learning and Evaluation

SEMESTER V - 22 Credits										
S.No	Course Code	Study Components and Course Title	Course Category	L	T	P	C	CIA	ESE	Total
		Knowledge								
1	19XXXXXX	Automotive Emission and Pollution Control	PC	3	0	0	3	25	75	100
2	19XXXXXX	Vehicle Design and Data Characteristics	PC	3	1	0	4	25	75	100
3	19XXXXXX	Automotive Fuels and Lubricants	PC	3	0	0	3	25	75	100
4	19XXXXXX	Professional Elective - 1	PE	3	0	0	3	25	75	100
5	19XXXXXX	Automotive Transmission	PC	2	0	2	3	50	50	100
6	19XXXXXX	Automotive Chassis Components Design	PC	2	0	2	3	50	50	100
7	19XXXXXX	Engine Performance and Emission Testing Lab	PC	0	0	3	1.5	50	50	100
8	19XXXXXX	Automotive Fuels and Lubricants Lab	PC	0	0	3	1.5	50	50	100
SEMESTER VI - 22 Credits										
S.No	Course Code	Study Components and Course Title	Course Category	L	T	P	C	CIA	ESE	Total
1	19XXXXXX	Total Quality Management	HS	3	0	0	3	25	75	100
2	19XXXXXX	Vehicle Dynamics and Control Systems	PC	3	0	0	3	25	75	100
3	19XXXXXX	Finite Element Analysis	PC	3	1	0	4	25	75	100
4	19XXXXXX	Professional Elective - 2	PE	3	0	0	3	25	75	100
5	19XXXXXX	Open Elective - 1	OE	3	0	0	3	25	75	100
6	19XXXXXX	Automotive Vehicle Body and Aerodynamics	PC	2	0	3	3.5	50	50	100
7	19XXXXXX	Finite Element Analysis Lab	PC	0	0	3	1.5	50	50	100
8	19XXXXXX	Internship Training / Implant Training	EEC	0	0	0	1	100		100
SEMESTER VII - 20 Credits										
S.No	Course Code	Study Components and Course Title	Course Category	L	T	P	C	CIA	ESE	Total
1	19XXXXXX	Advanced Electrical and Electronics	PC	3	0	0	3	25	75	100



**Criterion II**  
**Teaching-Learning and Evaluation**

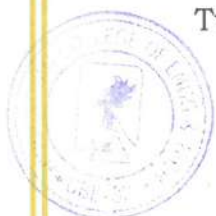
2	19XXXXXX	Engine and Vehicle Management Systems	PC	3	0	0	3	25	75	100
3	19XXXXXX	Professional Elective – 3	PE	3	0	0	3	25	75	100
4	19XXXXXX	Open Elective – 2	OE	3	0	0	3	25	75	100
5	19XXXXXX	Electric and Hybrid Vehicle	PC	2	0	2	3	50	50	100
6	19XXXXXX	Advanced Electrical and Electronics Lab	PC	0	0	3	1.5	50	50	100
7	19XXXXXX	Vehicle Maintenance Laboratory	PC	0	0	3	1.5	50	50	100
8	19XXXXXX	Project Work – Phase I	EEC	0	0	4	2	50	50	100

**SEMESTER VIII – 18 Credits**

S.No	Course Code	Study Components and Course Title	Course Category	L	T	P	C	CIA	ESE	Total
1	19XXXXXX	Professional Elective – 4	PE	3	0	0	3	25	75	100
2	19XXXXXX	Professional Elective – 5	PE	3	0	0	3	25	75	100
3	19XXXXXX	Project Work – Phase II	EEC	0	0	24	12	100	100	200

**List of laboratories:**

- Automotive Components laboratory
- Automotive Design laboratory
- Automotive Electrical and Electronics laboratory
- Automotive Fuels and Lubricants laboratory
- Automotive Manufacturing Technology laboratory
- Automotive Structures laboratory
- Automotive Thermal and Fluid Engineering laboratory
- Automotive Vehicle Maintenance laboratory
- Engine Performance and Emission Testing laboratory
- Two and Three Wheelers laboratory





Criterion II  
Teaching-Learning and Evaluation



Automotive Thermal and Fluid Engineering laboratory



Automotive Structures laboratory



Criterion II  
Teaching-Learning and Evaluation



Automotive Fuels and Lubricants laboratory



Automotive Electrical and Electronics laboratory





Criterion II  
Teaching-Learning and Evaluation



Automotive Design laboratory



Automotive Components laboratory





Criterion II  
Teaching-Learning and Evaluation



Automotive Vehicle Maintenance laboratory



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**Criterion II  
Teaching-Learning and Evaluation**

**B.E Biomedical Engineering**

**REGULATION - 2019**

(For the students admitted during the academic year 2020-2021 and onwards)

**SEMESTER I**

S. No.	Course Code	Course Title	Category	L	T	P	C	CIA	ESE
<b>THEORY</b>									
1	19HE1101	Technical English	HS	3	0	0	3	25	75
2	19MA1103	Calculus and Differential Equations	BS	3	1	0	4	25	75
<b>THEORY AND LAB COMPONENT</b>									
3	19PH1151	Applied Physics	BS	2	0	2	3	50	50
4	19CY1151	Engineering Chemistry	BS	2	0	2	3	50	50
5	19CS1151	Python Programming and Practices	ES	2	0	2	3	50	50
6	19EE1154	Basics of Electrical Engineering	ES	2	0	2	3	50	50
<b>VALUE ADDED COURSE</b>									
7	19HE1071/ 19HE1071R	Competency Enhancement Course- I	HS	1	0	0	1	50	50

**SEMESTER II**

S. No.	Course	Course Title	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>									
1	19HE2101	Business English for Engineers	HS	3	0	0	3	25	75
2	19MA2102	Complex Variables and Transform Calculus	BS	3	1	0	4	25	75
<b>THEORY AND LAB COMPONENT</b>									
3	19PH2151	Material Science	BS	2	0	2	3	50	50





Criterion II  
Teaching-Learning and Evaluation

4	19CY2151	Environmental Studies	BS	2	0	2	3	50	50
5	19CS2152	Essentials of C & C ++ Programming	ES	2	0	2	3	50	50
6	19ME2154	Engineering Graphics	ES	1	0	4	3	50	50
<b>PRACTICAL</b>									
7	19ME2001	Engineering Practices laboratory	ES	0	0	4	2	50	50
<b>VALUE ADDED COURSE</b>									
8	19HE2071/ 19HE2071R	Language Competency enhancement Course-II	HS	1	0	0	1	50	50

**SEMESTER III**

S. No.	Course	Course Title	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>									
1	19MA3102	Fourier Analysis and Transforms	BS	3	1	0	4	25	75
2	19BM3201	Electron Devices and Circuits	PC	3	1	0	4	25	75
3	19BM3202	Medical Biochemistry	PC	3	0	0	3	25	75
4	19BM3203	Human Anatomy and physiology	PC	3	0	0	3	25	75
<b>THEORY AND LAB COMPONENT</b>									
5	19BM3251	Digital Electronics	PC	2	0	2	3	50	50
<b>PRACTICAL</b>									
6	19BM3001	Electron Devices and Circuits Laboratory	PC	0	0	3	1.5	50	50
7	19BM3002	Biochemistry Laboratory	PC	0	0	3	1.5	50	50
<b>MANDATORY COURSE</b>									
8	19MC3191	Indian Constitution	MC	2	0	0		100	0

**SEMESTER IV**





Criterion II  
Teaching-Learning and Evaluation

S. No.	Course	Course Title	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>									
1	19BM4201	Linear Integrated Circuits	PC	3	1	0	4	25	75
2	19BM4202	BioMEMS and Nanotechnology	PC	3	1	0	4	25	75
3	19BM4203	Pathology and Microbiology	PC	3	0	0	3	25	75
<b>THEORY AND LAB COMPONENT</b>									
4	19MA4152	Statistics and Numerical Methods	BS	3	0	2	4	25	75
5	19BM4251	Sensors and Measurement	PC	2	0	2	3	50	50
<b>PRACTICAL</b>									
6	19BM4001	Integrated Circuits lab	PC	0	0	3	1.5	50	50
7	19BM4002	Human Physiology Laboratory	PC	0	0	3	1.5	50	50
<b>MANDATORY COURSE</b>									
8	19MC4191	Value education- Essence of Indian Traditional Knowledge	MC	2	0	0	0	100	0

**SEMESTER V**

S. No.	Course	Course Title	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>									
1	19BM5201	Biocontrol systems	PC	3	1	0	4	25	75
2	19BM5202	Medical Informatics	PC	3	0	0	3	25	75
3	19BM5203	Microprocessors and Microcontrollers	PC	3	0	0	3	25	75
4	19BM5204	Biomedical Instrumentation	PC	3	0	0	3	25	75
5	19BM53XX	Professional Elective-I	PE	3	0	0	3	25	75





**Criterion II  
Teaching-Learning and Evaluation**

THEORY AND LAB COMPONENT									
6	19BM5251	Hospital Engineering	PC	2	0	2	3	50	50
PRACTICAL									
7	19BM5001	Microprocessors and Microcontrollers Lab	PC	0	0	3	1.5	50	50
8	19BM5002	Biomedical Instrumentation lab	PC	0	0	3	1.5	50	50

**SEMESTER VI**

S. No.	Course	Course Title	L	T	P	C	CIA	ESE	TOTAL
THEORY									
1	19BM6201	Biosignal Processing	PC	3	1	0	4	25	75
2	19BM6202	Biomechanics	PC	3	0	0	3	25	75
3	19BM63XX	Professional Elective-II	PE	3	0	0	3	25	75
4	19XX64XX	Open Elective-I	OE	3	0	0	3	25	75
5	19BM6181	Entrepreneurship Development	HS	3	0	0	3	25	75
THEORY AND LAB COMPONENT									
6	19BM6251	Diagnostic and Therapeutic Equipment-I	PC	3	0	2	3.5	50	50
PRACTICAL									
7	19BM6001	Biosignal Processing Laboratory	PC	0	0	3	1.5	50	50
8	19BM6701	Industrial Training*	EEC	0	0	0	1		100

**SEMESTER VII**

S. No.	Course	Course Title	L	T	P	C	CIA	ESE	TOTAL
THEORY									
	19BM7201	Diagnostic and Therapeutic Equipment-II	PC	3	0	0	3	25	75





**Criterion II  
Teaching-Learning and Evaluation**

3	19BM7202	Medical Image Processing	PC	3	0	0	3	25	75
4	19BM73XX	Professional Elective-III	PE	3	0	0	3	25	75
5	19XX74XX	Open Elective II	OE	3	0	0	3	25	75
<b>THEORY AND LAB COMPONENT</b>									
6	19BM7251	Medical Device Design	PC	2	0	2	3	50	50
<b>PRACTICAL</b>									
7	19BM7001	Image Processing Laboratory	PC	0	0	3	1.5	50	50
8	19BM7002	Biomedical Equipment Laboratory	PC	0	0	3	1.5	50	50
9	19BM7901	Project Phase I	EEC	0	0	4	2	50	50

**SEMESTER VIII**

S. No.	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>									
1	19BM83XX	Professional Elective-IV	PE	3	0	0	3	25	75
2	19BM83XX	Professional Elective-V	PE	3	0	0	3	25	75
<b>PRACTICAL</b>									
3	19BM8901	Project Phase II	EEC	0	0	24	12	100	100

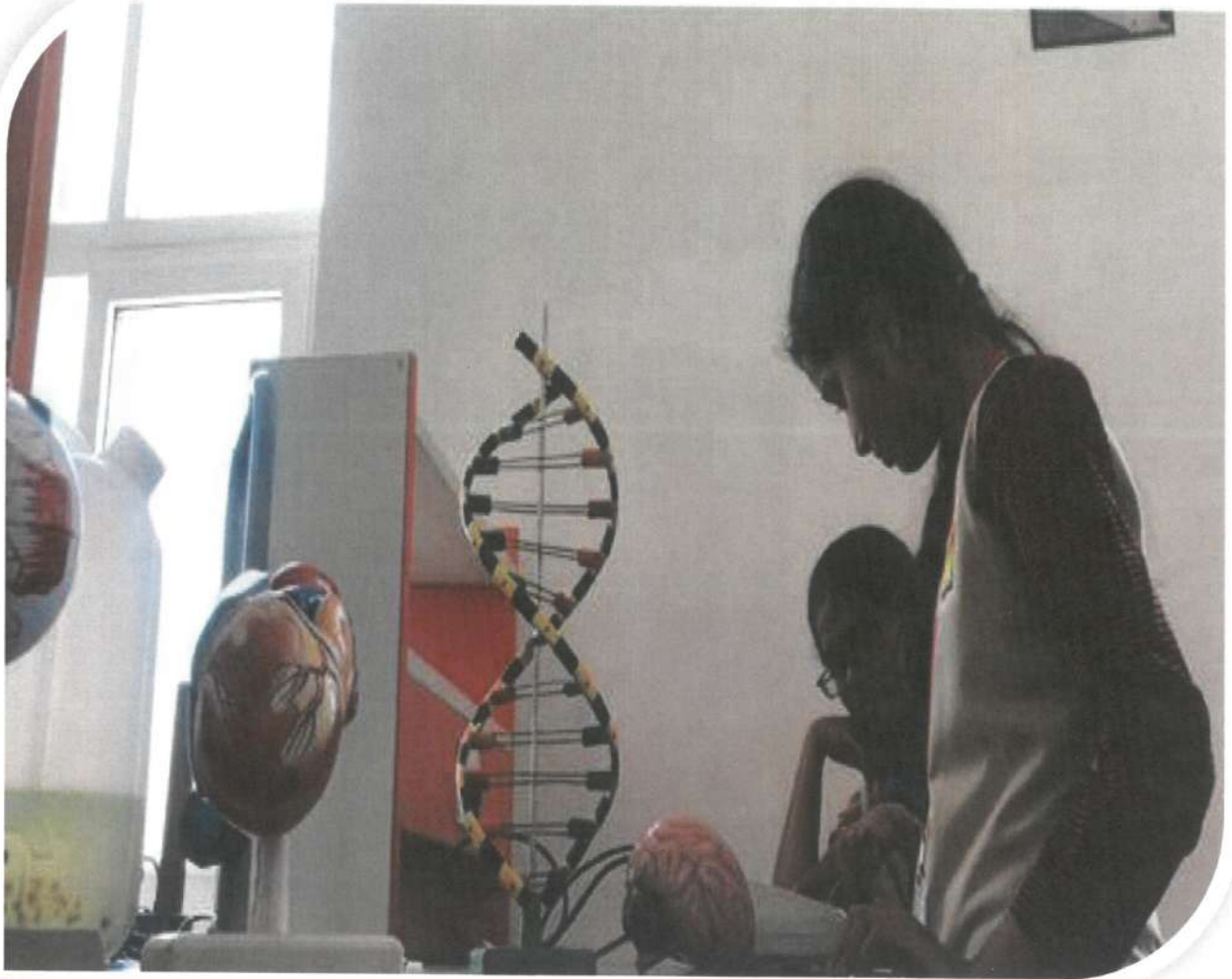
**List of Labs**

Human Physiology lab  
Biomedical Instrumentation Lab  
Computer Lab  
Electronics lab  
Sensors lab





Criterion II  
Teaching-Learning and Evaluation



Human Physiology lab





Criterion II  
Teaching-Learning and Evaluation



Biomedical Instrumentation Lab



Computer Lab



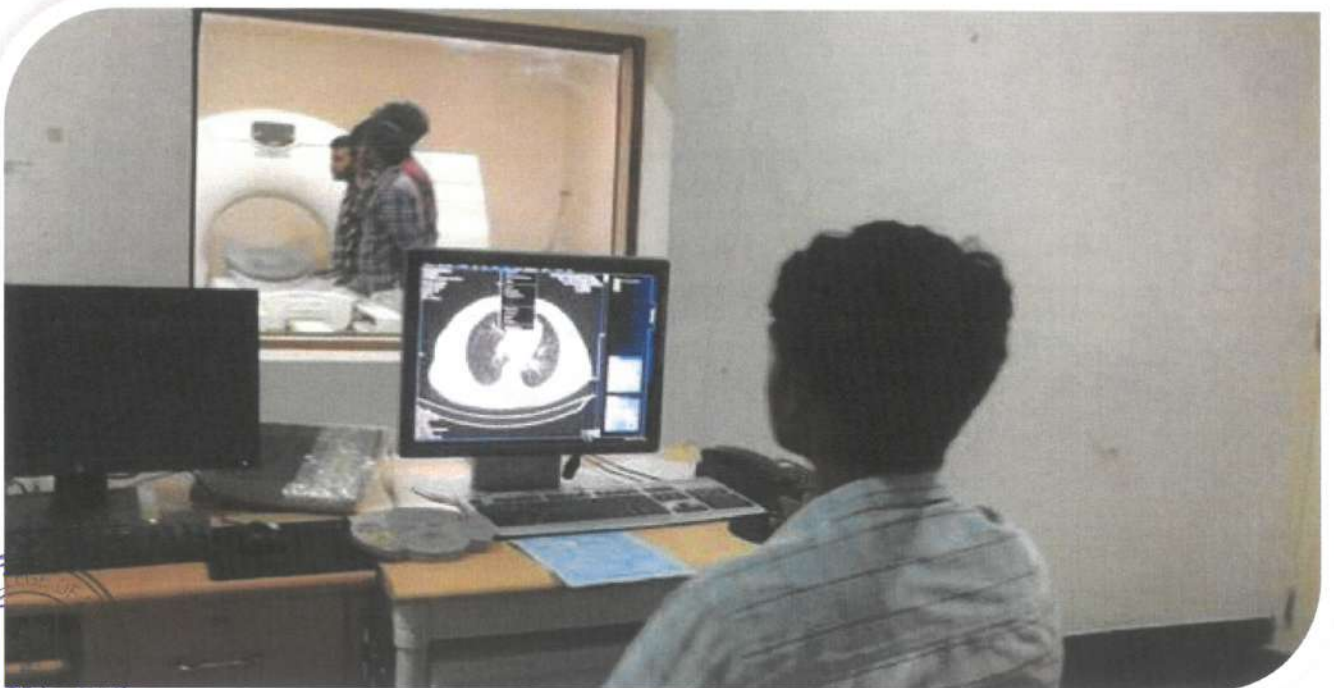
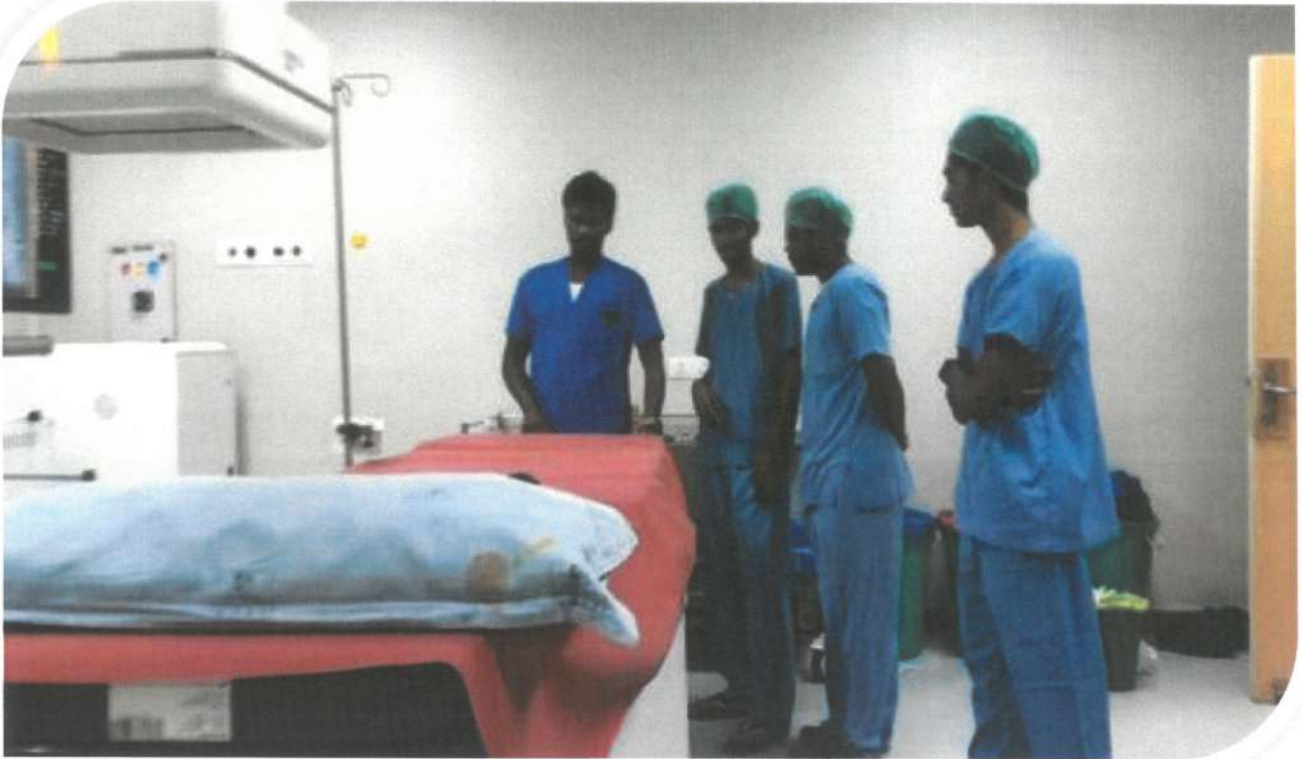


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**NAAC  
SSR  
Cycle 2**

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Teaching-Learning and Evaluation**



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Criterion II  
Teaching-Learning and Evaluation

**B.E. Civil Engineering**

**REGULATION - 2019**

(For the students admitted during the academic year 2018-2019 and onwards)

**SEMESTER I**

S.No.	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
1	19HE1101	Technical English	HS	2	1	0	3	25	75	100
2	19MA1102	Calculus and Linear Algebra	BS	3	1	0	4	25	75	100
3	19PH1151	Applied Physics	BS	2	0	2	3	50	50	100
4	19CY1151	Chemistry for Engineers	BS	2	0	2	3	50	50	100
5	19CS1151	Problem Solving and Python Programming	ES	2	0	2	3	50	50	100
6	19ME1152	Engineering Drawing	ES	1	0	4	3	50	50	100
7	19HE1071	Language Competency Enhancement Course - I	HS	1	0	0	1	100	-	100
8	19MC1191	Induction Programme	MC	-	-	-	-	-	-	-

**SEMESTER II**

S.No.	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
1	19HE2101	Business English for Engineers	HS	2	1	0	3	25	75	100
2	19MA2101	Differential Equations and Complex Variables	BS	3	1	0	4	25	75	100
3	19EE2103	Basics of Electrical and Electronics Engineering	ES	3	0	0	3	25	75	100
4	19ME2101	Engineering Mechanics	ES	3	0	0	3	25	75	100
5	19PH2151	Material Science	BS	2	0	2	3	50	50	100
6	19CY2151	Environmental Studies	BS	2	0	2	3	50	50	100
8	19ME2001	Engineering Practices	ES	0	0	4	2	50	50	100
9	19HE2071	Language Competency Enhancement Course -II	HS	1	0	0	1	100	-	100

**SEMESTER III**

S.No.	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
1	19MA3103	Fourier Analysis and Numerical Methods	BS	3	1	0	4	25	75	100
	19CE3201	Mechanics of Fluids	PC	3	0	0	3	25	75	100
	19CE3202	Geology and Construction Materials	PC	3	0	0	3	25	75	100





**Criterion II**  
**Teaching-Learning and Evaluation**

4	19CE3203	Surveying	PC	3	0	0	3	25	75	100
5	19CE3251	Mechanics of Solids	PC	2	0	2	3	50	50	100
6	19CE3001	Survey Lab	PC	0	0	4	2	50	50	100
7	19CE3002	Computer Aided Building Drawing	PC	0	0	4	2	50	50	100
-	19MC3191	Indian Constitution	MC	2	0	0	0	-	-	-

**SEMESTER IV**

S.No.	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
-	19MA4103	Probability and Statistics	BS	3	1	0	4	25	75	100
8	19CE4201	Strength of Materials	PC	3	1	0	4	25	75	100
9	19CE4202	Applied Hydraulics and Hydraulic Machinery	PC	3	0	0	3	25	75	100
10	19CE4203	Soil Mechanics	PC	3	0	0	3	25	75	100
11	19CE4251	Concrete Technology	PC	2	0	2	3	50	50	100
12	19CE4001	Soil Mechanics Lab	PC	0	0	4	2	50	50	100
13	19CE4002	Fluid Mechanics and Hydraulic Machinery Lab	PC	0	0	4	2	50	50	100
-	19MC4191	Essence of Indian Traditional Knowledge	MC	2	0	0	0	-	-	-

**SEMESTER V**

S.No.	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
14	19CE5201	Structural Analysis - I	PC	3	0	0	3	25	75	100
15	19CE5202	Design of RC Elements	PC	3	1	0	4	25	75	100
16	19CE5203	Water Supply Engineering	PC	3	0	0	3	25	75	100
17	19CE5204	Foundation Engineering	PC	3	0	0	3	25	75	100
18	19CE5205	Highway and Railway Engineering	PC	3	0	0	3	25	75	100
-	19CE53XX	Professional Elective - I	PE	3	0	0	3	25	75	100
19	19CE5001	Concrete and Highway Engineering Lab	PC	0	0	4	2	50	50	100
20	19CE5002	Survey Camp*	PC	0	0	0	1	50	50	100

\*Survey camp of one week has to be undergone by the student during fourth semester vacation.

**SEMESTER VI**

S.No.	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
	19CE6181	Construction Management	HS	3	0	0	3	25	75	100
	19CE6201	Structural Analysis - II	PC	3	0	0	3	25	75	100





Criterion II  
Teaching-Learning and Evaluation

23	19CE6202	Design of Steel Structural Elements	PC	3	0	0	3	25	75	100
24	19CE6203	Wastewater Engineering	PC	3	0	0	3	25	75	100
-	19CE63XX	Professional Elective - II	PE	3	0	0	3	25	75	100
-	19XX64XX	Open Elective - I	OE	3	0	0	3	25	75	100
25	19CE6001	Water and Wastewater Testing Lab	PC	0	0	3	1.5	50	50	100
26	19CE6002	Design and Drawing of RC Structures	PC	0	0	3	1.5	50	50	100
27	19CE6701	Internship / Industrial Training*	EEC	0	0	0	1	0	100	100

\*Internship / Industrial Training of three weeks duration has to be undergone by the students from third to fifth semester vacation

SEMESTER VII

S.No.	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
28	19CE7201	Water Resources and Irrigation Engineering	PC	3	0	0	3	25	75	100
29	19CE7202	Structural Dynamics and Earthquake Engineering	PC	3	0	0	3	25	75	100
30	19CE7203	Estimation, Costing and Valuation	PC	3	1	0	4	25	75	100
-	19CE73XX	Professional Elective - III	PE	3	0	0	3	25	75	100
-	19XX74XX	Open Elective - II	OE	3	0	0	3	25	75	100
31	19CE7001	Design and Drawing of Steel Structures	PC	0	0	4	2	50	50	100
32	19CE7901	Project I - Design Project	EEC	0	0	4	2	100	100	200

SEMESTER VIII

S.No.	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
-	19CE83XX	Professional Elective - IV	PE	3	0	0	3	25	75	100
-	19CE83XX	Professional Elective - V	PE	3	0	0	3	25	75	100
	19CE8901	Project II - Main Project	EEC	0	0	24	12	100	100	200





Criterion II  
Teaching-Learning and Evaluation

**List of Labs**

- Strength of Materials Laboratory
- Fluid Mechanics and Machinery Laboratory
- Survey Laboratory
- Environmental Engineering Laboratory
- Soil Mechanics Laboratory
- Concrete and Highway Laboratory
- Computer Aided Design and Drafting Laboratory





Criterion II  
Teaching-Learning and Evaluation





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COIMBATORE



Criterion II  
Teaching-Learning and Evaluation

**B.E. Computer Science and Engineering**

LIST OF PRACTICAL COURSES  
CURRICULUM – REGULATION 2019

SEMESTER - I

S.No	Course Code	Name of the Course	Course Category	L	T	P	C	CIA	ESE	TOTAL
1	19HE1101	Technical English	HS	2	1	0	3	25	75	100
2	19MA1101	Calculus	BS	3	1	0	4	25	75	100
3	19PH1151	Applied Physics	BS	2	0	2	3	50	50	100
4	19CY1151	Chemistry for Engineers	BS	2	0	2	3	50	50	100
5	19CS1151	Problem solving and Practices	ES	2	0	2	3	50	50	100
6	19EC1154	Basics of Electron devices and Electric Circuits	ES	2	0	2	3	50	50	100
7	19HE1071	Language Competency Enhancement Course I	HS	1	0	0	1	100	0	100
8	19MC1191	Induction Program	MC	0	0	0	0	0	0	0

SEMESTER - II

S.No	Course Code	Name of the Course	Course Category	L	T	P	C	CIA	ESE	TOTAL
1	19HE2101	Business English for Engineers	HS	2	1	0	3	25	75	100
2	19MA2104	Differential Equations And Linear Algebra	BS	3	1	0	4	25	75	100
3	19PH2151	Material Science	BS	2	0	2	3	50	50	100
4	19CY2151	Environmental Science	BS	2	0	2	3	50	50	100
5	19CS2152	Essentials of C and C++ Programming	ES	2	0	2	3	50	50	100
6	19ME2154	Engineering Graphics	ES	1	0	4	3	50	50	100
7	19ME2001	Engineering Practices	ES	0	0	4	2	50	50	100
8	19HE2071	Language Competency Enhancement Course II	HS	1	0	0	1	100	0	100



**Criterion II  
Teaching-Learning and Evaluation**

**SEMESTER - III**

S. No	Course Code	Name of the Course	Course Category	L	T	P	C	CIA	ESE	TOTAL
1	19MA3104	Discrete Mathematics and Graph Theory	BS	3	1	0	4	25	75	100
2	19CS3201	Data Structures	PC	3	0	0	3	25	75	100
3	19CS3202	Database Management Systems	PC	3	0	0	3	25	75	100
4	19CS3203	Computer Architecture	PC	3	0	0	3	25	75	100
5	19CS3251	Digital Principles and System Design	PC	3	0	2	4	50	50	100
6	19CS3001	Data Structures Laboratory	PC	0	0	3	1.5	50	50	100
7	19CS3002	Database Management Systems Laboratory	PC	0	0	3	1.5	50	50	100
8	19MC3191	Constitution of India	MC	2	0	0	0	0	0	0

**SEMESTER - IV**

S. No	Course Code	Name of the Course	Course Category	L	T	P	C	CIA	ESE	TOTAL
1	19CS4201	Java Programming	PC	3	0	0	3	25	75	100
2	19CS4202	Data mining	PC	3	1	0	4	25	75	100
3	19CS4203	Operating Systems	PC	3	0	0	3	25	75	100
4	19MA4151	Probability, Statistics and Queuing Theory	BS	3	0	2	4	50	50	100
5	19CS4251	Design and Analysis of Algorithms	PC	3	0	2	4	50	50	100
6	19CS4001	Java Programming Laboratory	PC	0	0	3	1.5	50	50	100
7	19CS4002	Operating Systems Laboratory	PC	0	0	3	1.5	50	50	100
8	19MC4191	Essence of Indian Traditional Knowledge	MC	2	0	0	0	0	0	0
<b>Total Credits</b>				17	1	10	21	275	425	700



**Criterion II  
Teaching-Learning and Evaluation**

**SEMESTER - V**

S. No	Course Code	Name of the Course	Course Category	L	T	P	C	CIA	ESE	TOTAL
1	19CS5201	Theory of Computing	PC	3	1	0	4	25	75	100
2	19CS5202	Computer Networks	PC	3	0	0	3	25	75	100
3	19EC5231	Principles of Microprocessors and Micro Controllers	PC	3	0	0	3	25	75	100
4	19CS5251	Data mining	PC	3	0	0	3	50	50	100
5	19CS5252	Fundamentals of Open Source Software	PC	2	0	2	3	50	50	100
6	19CS53**	Professional Elective I	PE	2	0	2	3	50	50	100
7	19CS5001	Engineering Clinic	PC	0	0	3	1.5	50	50	100
8	19EC5031	Principles of Microprocessors and Microcontrollers Laboratory	PC	0	0	3	1.5	50	50	100

**SEMESTER - VI**

S. No	Course Code	Name of the Course	Course Category	L	T	P	C	CIA	ESE	TOTAL
1	19CS6181	Principles of Management	HS	3	0	0	3	25	75	100
2	19CS6201	Artificial Intelligence	PC	3	1	0	4	25	75	100
3	19CS6202	Mobile Computing	PC	3	0	0	3	25	75	100
4	19**6401	Open Elective I	OE	3	0	0	3	25	75	100
5	19CS63**	Professional Elective II	PE	3	0	0	3	25	75	100
6	19CS6251	Compiler Design	PC	2	0	3	3.5	50	50	100
7	19CS6001	Mobile Application Development Laboratory	PC	0	0	3	1.5	50	50	100
8	19CS6701	Internship / Industrial Training	EEC	0	0	0	1	0	100	100



**Criterion II  
Teaching-Learning and Evaluation**

**SEMESTER - VII**

S · N o	Course Code	Name of the Course	Course Category	L	T	P	C	CIA	ESE	TOTAL
1	19CS7201	Cryptography and Network Security	PC	3	0	0	3	25	75	100
2	19CS7202	Cloud Computing	PC	3	0	0	3	25	75	100
3	19**7401	Open Elective II	OE	3	0	0	3	25	75	100
4	19CS73**	Professional Elective III	PE	3	0	0	3	25	75	100
5	19CS7251	Machine Learning Techniques	PC	2	0	2	3	50	50	100
6	19CS7001	Cloud Computing Laboratory	PC	0	0	3	1.5	50	50	100
7	19CS7002	Security Laboratory	PC	0	0	3	1.5	50	50	100
8	19CS7901	Project Phase I	EEC	0	0	4	2	50	50	100
Total Credits				14	0	12	20	300	500	800

**SEMESTER - VIII**

S · N o	Course Code	Name of the Course	Course Category	L	T	P	C	CIA	ESE	TOTAL
1	19CS83**	Professional Elective IV	PE	3	0	0	3	25	75	100
2	19CS83**	Professional Elective V	PE	3	0	0	3	25	75	100
3	19CS8901	Project Phase II	EEC	0	0	24	12	100	100	200

**List of Labs**

Multimedia and Networks Laboratory

RDBMS & CASE Tools Laboratory

Programming Laboratory

Networking and OS Laboratory





Criterion II  
Teaching-Learning and Evaluation



Multimedia and Networks Laboratory







**Hindusthan College of Engineering and Technology  
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Cycle 2**

**Criterion II  
Teaching-Learning and Evaluation**



**Principal  
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Criterion II  
Teaching-Learning and Evaluation

**B.E. Electrical and Electronics Engineering**

LIST OF PRACTICAL COURSES

REGULATION – 2019

(For the students admitted during the academic year 2019 onwards)

SEMESTER I

S.No.	Category	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	HS	19HE1101	Technical English	2	1	0	3	25	75	100
2	BS	19MA1103	Calculus and Differential Equations	3	1	0	4	25	75	100
<b>THEORY WITH LAB</b>										
3	BS	19PH1151	Applied Physics	2	0	2	3	50	50	100
4	BS	19CY1151	Engineering Chemistry	2	0	2	3	50	50	100
5	ES	19CS1151	Problem Solving and Python Programming	2	0	2	3	50	50	100
6	ES	19ME1152	Engineering Drawing	1	0	4	3	50	50	100
<b>PRACTICAL</b>										
7	HS	19HE1071 / 19HE1071 R	Language Competency Enhancement Course I	1	0	0	1	0	100	100
<b>Total Credits:</b>				<b>13</b>	<b>2</b>	<b>10</b>	<b>20</b>			<b>700</b>
<b>NON-CREDIT MANDATORY COURSE:</b> 19MC1091 - 3 Weeks Induction Program										

SEMESTER II

S. No	Category	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	HS	19HE2101	Business English for Engineers	2	1	0	3	25	75	100
2	BS	19MA2102	Complex Variables and Transform Calculus	3	1	0	4	25	75	100
<b>THEORY WITH LAB</b>										
3	BS	19PH2151	Physics of Materials	2	0	2	3	50	50	100
4	BS	19CY2151	Environmental Sciences	2	0	2	3	50	50	100
5	ES	19CS2152	Programming in C and C++	2	0	2	3	50	50	100
6	ES	19EE2151	Circuit Theory	2	0	2	3	50	50	100
<b>PRACTICAL</b>										



**Criterion II  
Teaching-Learning and Evaluation**

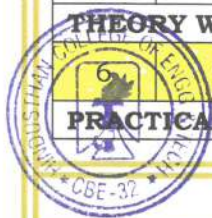
7	ES	19ME2001 / 19EE2001	Engineering Practices laboratory	0	0	4	2	50	50	100
8	HS	19HE2071 / 19HE2071 R	Language Competency Enhancement Course II	1	0	0	1	0	100	100
<b>Total Credits:</b>				<b>14</b>	<b>2</b>	<b>12</b>	<b>22</b>			<b>800</b>

**SEMESTER III**

S.No.	Category	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	BS	19MA3102	Fourier Analysis and Transforms	3	1	0	4	25	75	100
2	PC	19EE3201	Electronic Devices and Circuits	3	1	0	4	25	75	100
3	PC	19EE3202	Electrical Machines I	3	0	0	3	25	75	100
4	PC	19EE3203	Field Theory	3	0	0	3	25	75	100
5	AC	19AC31XX	Audit Course-I	2	0	0	0			
<b>THEORY WITH LAB</b>										
6	PC	19EE3251	Electrical and Electronic Measurements	2	0	2	3	50	50	100
<b>PRACTICAL</b>										
7	PC	19EE3001	Electronic Devices and Circuits Laboratory	0	0	3	1.5	50	50	100
8	PC	19EE3002	Electrical Machines Laboratory I	0	0	3	1.5	50	50	100
<b>Total Credits:</b>				<b>14</b>	<b>2</b>	<b>8</b>	<b>20</b>			<b>800</b>

**SEMESTER IV**

S.No.	Category	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	BS	19MA4101	Numerical Methods	3	1	0	4	25	75	100
2	PC	19EE4201	Electrical Machines II	3	1	0	4	25	75	100
3	PC	19EE4202	Integrated Circuits and its Applications	3	0	0	3	25	75	100
4	PC	19EE4203	Digital Signal Processing	3	0	0	3	25	75	100
5	AC	19AC41XX	Audit Course-II	2	0	0	0			
<b>THEORY WITH LAB</b>										
6	PC	19EE4251	Digital Logic Circuits	2	1	2	4	50	50	100
<b>PRACTICAL</b>										





Criterion II  
Teaching-Learning and Evaluation

7	PC	19EE4001	Electrical Machines Laboratory II	0	0	3	1.5	50	50	100
8	PC	19EE4002	Integrated Circuits Laboratory	0	0	3	1.5	50	50	100
<b>Total Credits:</b>				<b>14</b>	<b>3</b>	<b>8</b>	<b>21</b>			<b>800</b>

SEMESTER V

S.No.	Category	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	PC	19EE5201	Design of Electrical Machines	3	1	0	4	25	75	100
2	PC	19EE5202	Renewable and Non-Renewable Energy Sources	3	0	0	3	25	75	100
3	PC	19EE5203	Microprocessors and Microcontrollers	3	0	0	3	25	75	100
4	PC	19EE5204	Transmission and Distribution	3	0	0	3	25	75	100
5	PE1	19EE53XX	Professional Elective - I	3	0	0	3	25	75	100
<b>THEORY WITH LAB</b>										
6	PC	19EE5251	Control Systems Engineering	2	0	2	3	50	50	100
<b>PRACTICAL</b>										
7	PC	19EE5001	Control and Instrumentation Laboratory	0	0	3	1.5	50	50	100
8	PC	19EE5002	Microprocessors and Microcontrollers Laboratory	0	0	3	1.5	50	50	100
<b>Total Credits:</b>				<b>17</b>	<b>1</b>	<b>8</b>	<b>22</b>			<b>800</b>

SEMESTER VI

S.No.	Category	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	HS	19EE6181	Industrial Safety Management	3	0	0	3	25	75	100
2	PC	19EE6201	Power Electronics	3	0	0	3	25	75	100
3	PC	19EE6202	Power System Analysis	3	0	0	3	25	75	100
4	PE2	19EE63XX	Professional Elective - II	3	0	0	3	25	75	100
5	OE	19XX64XX	Open Elective-I	3	0	0	3	25	75	100
<b>THEORY WITH LAB</b>										
	PC	19EE6251	Embedded Systems	2	0	2	3	50	50	100







**Criterion II  
Teaching-Learning and Evaluation**

PRACTICAL										
7	PC	19EE6001	Power Electronics Laboratory	0	0	3	1.5	50	50	100
8	PC	19EE6002	Control Wiring and Circuit Design Laboratory	0	0	3	1.5	50	50	100
9	EEC	19EE6701	Internship/Industrial Training	0	0	0	1	0	100	100
<b>Total Credits:</b>				<b>17</b>	<b>0</b>	<b>8</b>	<b>22</b>			<b>900</b>

SEMESTER VII										
S.No.	Category	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	PC	19EE7201	Solid State Drives	3	0	0	3	25	75	100
2	PC	19EE7202	Protection and Switchgears	3	0	0	3	25	75	100
3	PE3	19EE73XX	Professional Elective - III	3	0	0	3	25	75	100
4	OE	19XX74XX	Open Elective-II	3	0	0	3	25	75	100
<b>THEORY WITH LAB</b>										
5	PC	19EE7251	Power System Operation and Control	2	0	2	3	50	50	100
<b>PRACTICAL</b>										
6	PC	19EE7001	Electric Drives and Control Laboratory	0	0	3	1.5	50	50	100
7	PC	19EE7002	Power System Simulation Laboratory	0	0	3	1.5	50	50	100
8	EEC	19EE7901	Project Phase I	0	0	4	2	50	50	100
<b>Total Credits:</b>				<b>14</b>	<b>0</b>	<b>12</b>	<b>20</b>			<b>800</b>

SEMESTER VIII										
S.No.	Category	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	PE4	19EE83XX	Professional Elective - IV	3	0	0	3	25	75	100
2	PE5	19EE83XX	Professional Elective - V	3	0	0	3	25	75	100
<b>PRACTICAL</b>										
3	EEC	19EE8901	Project Phase II	0	0	24	12	100	100	200
<b>Total Credits:</b>				<b>6</b>	<b>0</b>	<b>24</b>	<b>18</b>			<b>400</b>





Criterion II  
Teaching-Learning and Evaluation

**List of Lab**

- Circuits and Devices Laboratory
- Simulation Laboratory
- Engineering Practices Laboratory
- Electrical Machines Laboratory
- Power Electronics Laboratory
- Electrical Drives Laboratory
- Control and Instrumentation Laboratory
- Integrated Circuits Laboratory







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COIMBATORE - 641 032





Criterion II  
Teaching-Learning and Evaluation

**B.E. Electronics and Communication Engineering**

LIST OF PRACTICAL COURSES

SEMESTER I

S. No.	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>									
1	16MA1101	Engineering Mathematics-I (Matrices and Calculus)	3	2	0	4	25	75	100
2	16PH1101	Engineering Physics	3	0	0	3	25	75	100
3	16CY1101	Engineering Chemistry	3	0	0	3	25	75	100
4	16HE1101R	Essential English for Engineers - I	3	2	0	4	25	75	100
5	16GE1103	Problem Solving and Python Programming	3	0	0	3	25	75	100
6	16EC1201	Electron Devices	3	0	0	3	25	75	100
<b>PRACTICAL</b>									
7	16PS1001	Physical Sciences Lab - I	0	0	2	1	50	50	100
8	16GE1004	Problem Solving and Python Programming Lab	0	0	4	2	50	50	100
9	16GE1002	Engineering Practices Lab	0	0	4	2	50	50	100
10	16GE1003	Value Added Course I : Language Competency Enhancement	0	0	0	1	0	100	100
<b>Total Credits</b>			<b>18</b>	<b>4</b>	<b>10</b>	<b>26</b>			<b>1000</b>

SEMESTER II

S. No.	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>									
1	16MA2102	Engineering Mathematics-II (Vector Calculus, Complex variables and Laplace transforms)	3	2	0	4	25	75	100
2	16PH2102	Physics of Materials	3	0	0	3	25	75	100
3	16CY2102	Environmental Science	3	0	0	3	25	75	100
4	16HE2102R	Essential English for Engineers - II	3	2	0	4	25	75	100
5	16GE2102	Engineering Graphics	2	0	4	4	25	75	100
6	16EC2201	Circuit Theory	3	1	0	4	25	75	100
<b>PRACTICAL</b>									
7	16PS2001	Physical Sciences Lab - II	0	0	2	1	50	50	100
8	16EC2001	Electric Circuits and Electron Devices Lab	0	0	4	2	50	50	100
9	16GE2001	Value Added Course : Language Competency Enhancement Course-	0	0	0	1	0	100	100



Criterion II  
Teaching-Learning and Evaluation

Total Credits	18	5	10	26			900
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SEMESTER III

S. No.	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>									
1	16MA3106	Numerical Methods for Electronics Engineers	3	1	0	4	25	75	100
2	16EC3201	Digital Electronics	3	0	0	3	25	75	100
3	16EC3202	Signals and Systems	3	1	0	4	25	75	100
4	16EC3203	Electronic Circuits	3	0	0	3	25	75	100
5	16EC3204	Semiconductor Fabrication Technology	3	0	0	3	25	75	100
6	16CS3231	Data Structures and Algorithms	3	0	0	3	25	75	100
<b>PRACTICAL</b>									
7	16EC3001	Electronic Circuits Lab	0	0	4	2	50	50	100
8	16CS3031	Data Structures and Algorithms Lab	0	0	4	2	50	50	100
<b>Total Credits</b>			<b>18</b>	<b>2</b>	<b>8</b>	<b>24</b>			<b>800</b>

SEMESTER IV

S. No.	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>									
1	16MA4109	Probability and Random Processes	3	1	0	4	25	75	100
2	16EC4201	Electro Magnetic Fields	3	0	0	3	25	75	100
3	16EC4202	Control Systems	3	0	0	3	25	75	100
4	16EC4203	Measurement and Instrumentation	3	0	0	3	25	75	100
5	16EC4204	Linear Integrated Circuits	3	0	0	3	25	75	100
6	16CS4232	Object Oriented Programming and Structures	3	0	0	3	50	50	100
<b>PRACTICAL</b>									
7	16EC4001	Digital Electronics Lab	0	0	4	2	50	50	100
8	16EC4002	Linear Integrated Circuits Lab	0	0	4	2	50	50	100
<b>Total Credits</b>			<b>18</b>	<b>1</b>	<b>8</b>	<b>23</b>			<b>800</b>





Criterion II  
Teaching-Learning and Evaluation

SEMESTER V

S. No.	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>									
1	16EC5201	Analog Communication	3	0	0	3	25	75	100
2	16EC5202	Digital Signal Processing	3	1	0	4	25	75	100
3	16EC5203	Data Communication and Networks	3	0	2	4	50	50	100
4	16EC5204	Microprocessor and Microcontroller: Concepts and Applications	3	0	0	3	25	75	100
5	16EC5205	Transmission Lines and Waveguides	3	1	0	4	25	75	100
6	16EC53XX	<b>Professional Elective I</b>	3	0	0	3	25	75	100
<b>PRACTICAL</b>									
7	16EC5001	Digital Signal Processing Lab	0	0	4	2	50	50	100
8	16EC5002	Microprocessors and Microcontrollers Lab	0	0	4	2	50	50	100
<b>Total Credits</b>			<b>18</b>	<b>2</b>	<b>10</b>	<b>25</b>			<b>800</b>

SEMESTER VI

S. No.	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>									
1	16EC6201	VLSI Design	3	0	0	3	25	75	100
2	16EC6202	Digital Communication	3	0	0	3	25	75	100
3	16EC6203	Digital Image Processing	3	0	0	3	25	75	100
4	16EC6204	Antenna and Wave Propagation	3	0	0	3	25	75	100
5	16EC63XX	<b>Professional Elective II</b>	3	0	0	3	25	75	100
6	16XX64XX	<b>Open Elective I</b>	3	0	0	3	25	75	100
<b>PRACTICAL</b>									
7	16EC6001	Analog and Digital Communication Lab	0	0	4	2	50	50	100
8	16EC6002	VLSI Design Lab	0	0	4	2	50	50	100
9	16EC6801	Mini Project	0	0	4	2	100	-	100
<b>Total Credits</b>			<b>18</b>	<b>0</b>	<b>12</b>	<b>24</b>			<b>900</b>





Criterion II  
Teaching-Learning and Evaluation

SEMESTER VII

S. No.	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>									
1	16EC7201	Embedded and Real Time Systems	3	0	0	3	25	75	100
2	16EC7202	Wireless Communication	3	0	0	3	25	75	100
3	16EC7203	Microwave Engineering	3	0	0	3	25	75	100
4	16EC73XX	<b>Professional Elective III</b>	3	0	0	3	25	75	100
5	16EC73XX	<b>Professional Elective IV</b>	3	0	0	3	25	75	100
6	16XX74XX	<b>Open Elective II</b>	3	0	0	3	25	75	100
<b>PRACTICAL</b>									
7	16EC7001	Embedded Systems Lab	0	0	4	2	50	50	100
8	16EC7002	Optical Communication and Microwave Lab	0	0	4	2	50	50	100
9	16EC7701	Technical Seminar/Implant Training/Certification Course/Internship	0	0	2	1	50	50	100
<b>Total Credits</b>			<b>18</b>	<b>0</b>	<b>10</b>	<b>23</b>			<b>900</b>

SEMESTER VIII

S. No.	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>									
1	16EC83XX	<b>Professional Elective V</b>	3	0	0	3	25	75	100
2	16EC83XX	<b>Professional Elective VI</b>	3	0	0	3	25	75	100
<b>PRACTICAL</b>									
3	16EC8901	Project Work	0	0	20	10	100	100	200
<b>Total Credits</b>			<b>6</b>	<b>0</b>	<b>20</b>	<b>16</b>			<b>400</b>





**Criterion II  
Teaching-Learning and Evaluation**

**List of Labs:**

- Microprocessor and System Design Laboratory
- Communication Laboratory
- Intel Intelligence Systems Laboratory
- Electronics Laboratory
- Microwave and Optical Laboratory
- Linear Integrated Circuits Laboratory
- Simulation Laboratory





Criterion II  
Teaching-Learning and Evaluation



  
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Criterion II  
Teaching-Learning and Evaluation

**B.E. Mechanical Engineering**

LIST OF PRACTICAL COURSES

SEMESTER I

S.No.	Course Code	Course Title	Type	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19HE1101	Technical English	HS	2	1	0	3	25	75	100
2	19MA1102	Calculus and Linear Algebra	BS	3	1	0	4	25	75	100
<b>THEORY &amp; LAB COMPONENT</b>										
3	19PH1101	Applied Physics	BS	2	0	2	3	25	75	100
4	19CY1101	Engineering Chemistry	BS	2	0	2	3	25	75	100
5	19CS1151	Problem Solving and Python Programming	ES	2	0	2	3	25	75	100
6	19ME1152	Engineering Drawing	ES	1	0	4	3	25	75	100
<b>PRACTICAL</b>										
7	19HE1071/ 19HE1071R	Language Enhancement Course-I	HS	1	0	0	1	100	0	100
8	19MC1191	Induction program	MC	0	0	0	0	0	0	0
<b>Total :</b>				<b>13</b>	<b>2</b>	<b>10</b>	<b>20</b>	<b>250</b>	<b>450</b>	<b>700</b>

SEMESTER II

S.No.	Course Code	Course Title	Type	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19HE2101	Business English for Engineers	HS	2	1	0	3	25	75	100
2	19MA2101	Differential Equations and Complex Variables	BS	3	1	0	4	25	75	100
3	19EE2103	Basics of Electrical and Electronics Engineering	ES	3	0	0	3	25	75	100
4	19ME2101	Engineering Mechanics	ES	3	0	0	3	25	75	100
<b>THEORY &amp; LAB COMPONENT</b>										
5	19PH2151	Physics of Materials	BS	2	0	2	3	25	75	100
6	19CY2151	Environmental Sciences	BS	2	0	2	3	25	75	100
<b>PRACTICAL</b>										
7	19ME2001	Engineering Practices Lab	ES	0	0	4	2	50	50	100
8	19HE2071/ 19HE2071R	Language Enhancement Course-II	HS	1	0	0	1	100	0	100
<b>Total</b>				<b>1</b>	<b>2</b>	<b>8</b>	<b>2</b>	<b>300</b>	<b>500</b>	<b>800</b>





**Criterion II  
Teaching-Learning and Evaluation**

6      2

**SEMESTER III**

S.No	Course Code	Course Title	Type	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19MA3101	Fourier Series and Statistics	BS	3	1	0	4	25	75	100
2	19ME3201	Manufacturing Technology-I	PC	3	0	0	3	25	75	100
3	19ME3202	Engineering Thermodynamics	PC	3	0	0	3	25	75	100
4	19ME3203	Engineering Materials and Metallurgy	PC	3	0	0	3	25	75	100
<b>THEORY AND LAB COMPONENT</b>										
5	19ME3251	Fluid Mechanics and Machinery	PC	3	0	2	4	50	50	100
<b>PRACTICAL</b>										
6	19ME3001	Manufacturing Technology Lab - I	PC	0	0	3	1.5	50	50	100
7	19ME3002	Computer Aided Drawing Lab	PC	0	0	3	1.5	50	50	100
8	19AC3191	Constitution of India	MC	2	0	0	0	0	0	0
<b>Total</b>				<b>17</b>	<b>1</b>	<b>8</b>	<b>20</b>	<b>225</b>	<b>475</b>	<b>700</b>

**SEMESTER IV**

S.No	Course Code	Course Title	Type	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19MA4101	Numerical Methods	BS	3	1	0	4	25	75	100
2	19ME4201	Manufacturing Technology - II	PC	3	0	0	3	25	75	100
3	19ME4202	Thermal Engineering	PC	3	0	0	3	25	75	100
4	19ME4203	Kinematics of Machinery	PC	3	1	0	4	25	75	100
<b>THEORY AND LAB COMPONENT</b>										
5	19ME4251	Strength of Materials	PC	3	0	2	4	50	50	100
<b>PRACTICAL</b>										
6	19ME4001	Manufacturing Technology Lab-II	PC	0	0	3	1.5	50	50	100
7	19ME4002	Thermal Engineering Lab	PC	0	0	3	1.5	50	50	100
8	19AC4191	Value Education -Essence of Indian tradition knowledge	MC	2	0	0	0	0	0	0
<b>Total</b>				<b>17</b>	<b>2</b>	<b>8</b>	<b>21</b>	<b>225</b>	<b>475</b>	<b>700</b>

**SEMESTER V**





Criterion II  
Teaching-Learning and Evaluation

S.No.	Course Code	Course Title	Type	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19ME5201	Dynamics of Machines	PC	3	0	0	3	25	75	100
2	19ME5202	Heat and Mass Transfer	PC	3	1	0	4	25	75	100
3	19ME5203	Design of Machine Elements	PC	3	0	0	3	25	75	100
4	19ME5204	Automobile Engineering	PC	3	0	0	3	25	75	100
5	19ME53XX	<b>Professional Elective - I</b>	PE	3	0	0	3	25	75	100
<b>THEORY AND LAB COMPONENT</b>										
6	19ME5251	Machine Drawing	PC	2	0	2	3	50	50	100
<b>PRACTICAL</b>										
7	19ME5001	Dynamics Lab	PC	0	0	3	1.5	50	50	100
8	19ME5002	Heat Transfer Lab	PC	0	0	3	1.5	50	50	100
<b>Total</b>				<b>17</b>	<b>1</b>	<b>8</b>	<b>22</b>	<b>250</b>	<b>550</b>	<b>800</b>

SEMESTER VI

S.No.	Course Code	Course Title	Type	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19ME6201	CAD/CAM	PC	3	0	0	3	25	75	100
2	19ME6202	Metrology and Quality Control	PC	3	0	0	3	25	75	100
3	19ME6203	Design of Transmission Systems	PC	3	0	0	3	25	75	100
4	19ME6181	Principles of Management	HS	3	0	0	3	25	75	100
5	19ME63XX	<b>Professional Elective - II</b>	PE	3	0	0	3	25	75	100
6	19XX64XX	<b>Open Elective -I</b>	OE	3	0	0	3	25	75	100
<b>PRACTICAL</b>										
7	19ME6001	CAD/CAM Lab	PC	0	0	3	1.5	50	50	100
8	19ME6002	Metrology and Measurements Lab	PC	0	0	3	1.5	50	50	100
9	19ME6701	Internship/Industrial Training	EEC	0	0	0	1	0	100	100
<b>Total</b>				<b>18</b>	<b>0</b>	<b>6</b>	<b>22</b>	<b>250</b>	<b>650</b>	<b>900</b>

SEMESTER VII

S.No.	Course Code	Course Title	Type	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										





**Criterion II**  
**Teaching-Learning and Evaluation**

1	19ME7201	Finite Element Analysis	PC	3	0	0	3	25	75	100
2	19ME7202	Power Plant Engineering	PC	3	0	0	3	25	75	100
3	19ME73XX	<b>Professional Elective - III</b>	PE	3	0	0	3	25	75	100
4	19ME73XX	<b>Professional Elective- IV</b>	PE	3	0	0	3	25	75	100
5	19XX74XX	<b>Open Elective -II</b>	OE	3	0	0	3	25	75	100
<b>PRACTICAL</b>										
6	19ME7001	Computer Aided Analysis Lab	PC	0	0	3	1.5	50	50	100
7	19ME7002	Comprehension Lab	PC	0	0	3	1.5	50	50	100
8	19ME7901	Project Work – Phase I	EEC	0	0	4	2	50	50	100
<b>Total</b>				<b>15</b>	<b>0</b>	<b>12</b>	<b>20</b>	<b>275</b>	<b>525</b>	<b>800</b>

**SEMESTER VIII**

S.No.	Course Code	Course Title	Type	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19ME8201	Engineering Economics and Cost Estimation	PC	3	0	0	3	25	75	100
2	19ME8XXX	<b>Professional Elective- V</b>	PE	3	0	0	3	25	75	100
<b>PRACTICAL</b>										
3	19ME8901	Project Work – Phase II	EEC	0	0	12	12	100	100	200
<b>Total</b>				<b>6</b>	<b>0</b>	<b>12</b>	<b>18</b>	<b>150</b>	<b>250</b>	<b>400</b>

**List of Labs**

Engineering Practices Laboratory  
 Manufacturing Technology Laboratory  
 Thermal Engineering Laboratory  
 Metrology & Measurements Laboratory  
 Dynamics Laboratory  
 CAD/CAM Laboratory





Criterion II  
Teaching-Learning and Evaluation





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Criterion II  
Teaching-Learning and Evaluation

**B.E. Electronics and Instrumentation Engineering**

LIST OF PRACTICAL COURSES

REGULATION – 2019

(For the students admitted during the academic year 2019-2020 and onwards)

Semester I

S.No.	Category	Course Code	Course Title	L	T	P	C	CIA	ESE	Total
1.	HS	19HE1101	Technical English	2	1	0	3	25	75	100
2.	BS	19MA1103	Calculus and Differential Equations	3	1	0	4	25	75	100
3.	BS	19PH1151	Applied Physics	2	0	2	3	50	50	100
4.	BS	19CY1151	Chemistry For Engineers	2	0	2	3	50	50	100
5.	ES	19CS1151	Python Programming and Practices	2	0	2	3	50	50	100
6.	ES	19ME1152	Engineering Drawing	1	0	4	3	50	50	100
7.	HS	19HE1071/ 19HE1071R	Language Competency Enhancement Course – I	0	0	0	1	0	100	100

Semester II

S.No.	Category	Course Code	Course Title	L	T	P	C	CIA	ESE	Total
1.	HS	19HE2101	Business English for Engineers	2	1	0	3	25	75	100
2.	BS	19MA2102	Complex Variables and Transform Calculus	3	1	0	4	25	75	100
3.	BS	19PH2151	Material Science	2	0	2	3	50	50	100
4.	BS	19CY2151	Environmental Studies	2	0	2	3	50	50	100
5.	ES	19CS2152	Essentials of C and C++ Programming	2	0	2	3	50	50	100
6.	ES	19EI2151	Circuit Theory	2	0	2	3	50	50	100
7.	ES	19ME2001 / 19EE2001	Engineering Practices Laboratory	0	0	4	2	50	50	100



Criterion II  
Teaching-Learning and Evaluation

8.	HS	19HE2071 / 19HE2071R	Language Competency Enhancement Course - II	0	0	0	1	0	100	100
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Semester III

S.No.	Category	Course Code	Course Title	L	T	P	C	CIA	ESE	Total
1.	BS	19MA310 2	Fourier Analysis and Transforms	3	1	0	4	25	75	100
2.	PC	19EI3201	Electronic Devices and Circuits	3	1	0	4	25	75	100
3.	PC	19EI3202	Sensors and Transducers	3	0	0	3	25	75	100
4.	PC	19ME323 1	Fluid Mechanics and Thermal Engineering	3	0	0	3	25	75	100
5.	PC	19EI3251	Electrical and Electronic Measurements	2	0	2	3	50	50	100
6.	PC	19EI3001	Electronic Devices and Circuits Laboratory	0	0	3	1.5	50	50	100
7.	PC	19EI3002	Sensors and Transducers Laboratory	0	0	3	1.5	50	50	100

Semester IV

S.No.	Category	Course Code	Course Title	L	T	P	C	CIA	ESE	Total
1.	BS	19MA410 1	Numerical Methods	3	1	0	4	25	75	100
2.	PC	19EI4201	Electrical Machines	3	1	0	4	25	75	100
3.	PC	19EI4202	Integrated Circuits and Its Applications	3	0	0	3	25	75	100
4.	PC	19EI4203	Industrial Instrumentation - I	3	0	0	3	25	75	100
5.	PC	19EI4251	Digital Logic Circuits	2	1	2	4	50	50	100
6.	PC	19EI4001	Electrical Machines Laboratory	0	0	3	1.5	50	50	100
	PC	19EI4002	Integrated Circuits Laboratory	0	0	3	1.5	50	50	100





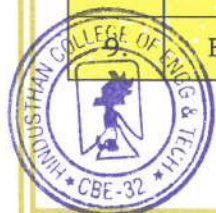
**Criterion II  
Teaching-Learning and Evaluation**

**Semester V**

S.No.	Category	Course Code	Course Title	L	T	P	C	CIA	ESE	Total
1.	PC	19EI5201	Industrial Instrumentation – II	3	0	0	3	25	75	100
2.	PC	19EI5202	Control Systems	3	1	0	4	25	75	100
3.	PC	19EI5203	Microprocessors and Microcontrollers	3	0	0	3	25	75	100
4.	PC	19EI5204	Analytical Instrumentation	3	0	0	3	25	75	100
5.	PE	19EI53XX	Professional Elective - I	3	0	0	3	25	75	100
6.	PC	19EI5251	Programmable Logic Controllers and SCADA	2	0	2	3	50	50	100
7.	PC	19EI5001	Industrial Instrumentation Laboratory	0	0	3	1.5	50	50	100
8.	PC	19EI5002	Microprocessors and Microcontrollers Laboratory	0	0	3	1.5	50	50	100

**Semester VI**

S.No.	Category	Course Code	Course Title	L	T	P	C	CIA	ESE	Total
1.	HS	19EI6181	Industrial Safety Management	3	0	0	3	25	75	100
2.	PC	19EI6201	Process Control	3	0	0	3	25	75	100
3.	PC	19EI6202	Discrete Time and Signal Processing	3	0	0	3	25	75	100
4.	PE	19EI63XX	Professional Elective – II	3	0	0	3	25	75	100
5.	OE	19XX64XX	Open Elective - I	3	0	0	3	25	75	100
6.	PC	19EI6251	Embedded Systems	2	0	2	3	50	50	100
7.	PC	19EI6001	Process Control Laboratory	0	0	3	1.5	50	50	100
8.	PC	19EI6002	Virtual Instrumentation Laboratory	0	0	3	1.5	50	50	100
	EEC	19EI6701	Internship Training	0	0	0	1	0	100	100





**Criterion II  
Teaching-Learning and Evaluation**

**Semester VII**

S.No	Category	Course Code	Course Title	L	T	P	C	CIA	ESE	Total
1.	PC	19EI7201	Computer Control of Process	3	0	0	3	25	75	100
2.	PC	19EI7202	Industrial Electronics	3	0	0	3	25	75	100
3.	PE	19EI73XX	Professional Elective – III	3	0	0	3	25	75	100
4.	OE	19XX74XX	Open Elective – II	3	0	0	3	25	75	100
5.	PC	19EI7251	Bio-Medical Instrumentation	2	0	2	3	50	50	100
6.	PC	19EI7001	Computer Control of Process Laboratory	0	0	3	1.5	50	50	100
7.	PC	19EI7002	Instrumentation System Design Laboratory	0	0	3	1.5	50	50	100
8.	EEC	19EI7901	Project Phase – I	0	0	4	2	50	50	100

**Semester VIII**

S.No.	Category	Course Code	Course Title	L	T	P	C	CIA	ESE	Total
1.	PE	19EI83XX	Professional Elective – IV	3	0	0	3	25	75	100
2.	PE	19EI81XX	Professional Elective – V	3	0	0	3	25	75	100
3.	EEC	19EI8901	Project Phase – II	0	0	24	12	100	100	200

**List of Labs**

Process Control Lab

Transducers and Measurement Lab

Industrial Instrumentation Lab

Virtual Instrumentation Lab

Instrumentation System Design Lab

Industry Powered Laboratory: NI-HICET LabVIEW Academy







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**NAAC  
SSR  
Cycle 2**

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Criterion II  
Teaching-Learning and Evaluation

**B.E. Mechatronics Engineering**

LIST OF PRACTICAL COURSES

REGULATION - 2019

SEMESTER I

S.No.	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19HE1101	Technical English	HS	2	1	0	3	25	75	100
2	19MA1102	Calculus and Linear Algebra	BS	3	1	0	4	25	75	100
<b>THEORY CUM PRACTICAL</b>										
3	19PH1151	Applied Physics	BS	2	0	2	3	50	50	100
4	19CY1151	Engineering Chemistry	BS	2	0	2	3	50	50	100
5	19CS1151	Problem Solving and Python Programming	ES	2	0	2	3	50	50	100
6	19ME1153	Engineering Drawing	ES	1	0	4	3	50	50	100
<b>PRACTICAL</b>										
7	19HE1701	Language Competency Enhancement Course - I	HS	1	0	0	1	100	0	100
<b>MANDATORY</b>										
8	19MC1001	Mandatory I : Induction Program	MC	0	0	0	0	100	0	100
<b>Total :</b>				13	2	10	20			800

SEMESTER II

S.No.	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19HE2101	Business English	HS	2	1	0	3	25	75	100
2	19MA2101	Differential Equations and Complex Variables	BS	3	1	0	4	25	75	100
3	19ME2101	Engineering Mechanics	ES	3	0	0	3	50	50	100
<b>THEORY CUM PRACTICAL</b>										
4	19PH2151	Physics of Materials	BS	2	0	2	3	50	50	100
5	19CY2151	Environmental Sciences	BS	2	0	2	3	50	50	100



Criterion II  
Teaching-Learning and Evaluation

6	19MT2153	Basics of Mechatronics Engineering	ES	2	0	2	3	50	50	100
<b>PRACTICAL</b>										
7	19GE2001	Engineering Practices Lab	ES	0	0	4	2	50	50	100
8	19HE2701	Language Competency Enhancement Course - II	HS	1	0	0	1	100	0	100
<b>Total :</b>				15	2	10	22			800

SEMESTER III

S.No.	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19MA3101	Fourier Series and Statistics	BS	3	1	0	4	25	75	100
2	19MT3201	Mechanics of solids	PC	3	1	0	4	25	75	100
3	19MT3202	Industrial Motor Control	PC	3	0	0	3	25	75	100
4	19MT3203	Digital Applications in Mechatronics Systems	PC	3	0	0	3	25	75	100
<b>THEORY CUM PRACTICAL</b>										
5	19MT3151	Production Technology	PC	2	0	2	3	50	50	100
<b>PRACTICAL</b>										
6	19MT3001	Computer Aided Drafting Laboratory	PC	0	0	3	1.5	50	50	100
7	19MT3002	Industrial Motor Control Laboratory	PC	0	0	3	1.5	50	50	100
<b>MANDATORY</b>										
8	19AC3191	Mandatory II : Indian Constitution	MC	2	0	0	0	100	0	100
<b>Total</b>				16	2	8	20			800

SEMESTER IV

S.No.	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19MA4101	Numerical Methods	BS	3	1	0	4	25	75	100
	19MT4201	Microcomputer Systems and Microcontroller	PC	3	0	0	3	25	75	100
	19MT4202	Thermodynamics and Fluid Engineering	PC	3	1	0	4	25	75	100



Criterion II  
Teaching-Learning and Evaluation

4	19MT4203	Theory of Machines	PC	3	1	0	4	25	75	100
<b>THEORY CUM PRACTICAL</b>										
5	19MT4251	Sensors and Signal Conditioning	PC	2	0	2	3	50	50	100
<b>PRACTICAL</b>										
6	19MT4001	Assembly Programming and Interfacing Laboratory	PC	0	0	3	1.5	50	50	100
7	19MT4002	Solid and Fluid Mechanics & Machinery Laboratory	PC	0	0	3	1.5	50	50	100
<b>MANDATORY</b>										
8	19AC4191	Mandatory III : Essence of Indian Traditional Knowledge	MC	2	0	0	0	100	0	100
<b>Total</b>				16	3	8	21			800

SEMESTER V

S.No.	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19MT5201	Machine Design	PC	3	1	0	4	25	75	100
2	19MT5202	Industrial Automation and Control	PC	3	0	0	3	25	75	100
3	19MT5203	Control of Mechatronics Systems	PC	3	0	0	3	25	75	100
4	19MT53XX	Professional Elective - I	PE	3	0	0	3	25	75	100
<b>THEORY CUM PRACTICAL</b>										
5	19MT5251	Fluid Power Systems	PC	2	0	2	3	50	50	100
6	19MT5252	Object Oriented Programming	PC	2	0	2	3	50	50	100
<b>PRACTICAL</b>										
7	19MT5001	Computer Aided Machine Drawing Laboratory	PC	0	0	3	1.5	50	50	100
8	19MT5002	Industrial Automation and Control Laboratory - I	PC	0	0	3	1.5	50	50	100
<b>Total</b>				16	1	10	22			800





Criterion II  
Teaching-Learning and Evaluation

SEMESTER VI

S.No.	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19MT6181	Total Quality Management	HE	3	0	0	3	25	75	100
2	19MT6201	Design of Mechatronics Systems	PC	3	0	0	3	25	75	100
3	19MT6202	CNC Technology	PC	3	0	0	3	25	75	100
4	19MT63XX	Professional Elective - II	PE	3	0	0	3	25	75	100
5	19MT6401	Open Elective - I	OE	3	0	0	3	25	75	100
<b>THEORY CUM PRACTICAL</b>										
6	19MT6251	Vetronics	PC	2	0	2	3	50	50	100
<b>PRACTICAL</b>										
7	19MT6001	CNC Laboratory	PC	0	0	3	1.5	50	50	100
8	19MT6002	Industrial Automation and Control Laboratory - II	PC	0	0	3	1.5	50	50	100
9	19MT6701	Inplant Training / Internship *	EEC	0	0	0	1	100	0	100
<b>Total</b>				17	0	8	22			900

SEMESTER VII

S.No.	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19MT7201	Virtual Instrumentation and Human Machine Interface	PC	3	1	0	4	25	75	100
2	19MT7202	Machine Vision Systems	PC	3	0	0	3	25	75	100
3	19MT73XX	Professional Elective - III	PE	3	0	0	3	25	75	100
4	19MT7401	Open Elective - II	OE	3	0	0	3	25	75	100
<b>THEORY CUM PRACTICAL</b>										
5	19MT7251	Industrial Robotics	PC	2	0	3	3.5	50	50	100





**Criterion II  
Teaching-Learning and Evaluation**

PRACTICAL										
6	19MT7001	CAE Laboratory	PC	0	0	3	1.5	50	50	100
7	19MT7901	Project Phase – I	EEC	0	0	4	2	50	50	100
<b>Total</b>				14	1	10	20			700

**SEMESTER VIII**

S.No.	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
THEORY										
1	19MT83XX	Professional Elective – IV	PE	3	0	0	3	25	75	100
2	19MT83XX	Professional Elective – V	PE	3	0	0	3	25	75	100
PRACTICAL										
3	19MT8901	Project Phase – II	EEC	0	0	24	12	100	100	200
<b>Total</b>				6	0	24	18			400

**List of Labs**

- Assembly Programming and Interfacing Laboratory
- Computer Aided Drafting Laboratory
- Embedded System Laboratory
- Fluid Power Laboratory
- Industrial Automation and Control Laboratory
- Industrial Motor Control Laboratory
- Industrial Robotics Laboratory
- Sensors and Signal Conditioning Laboratory



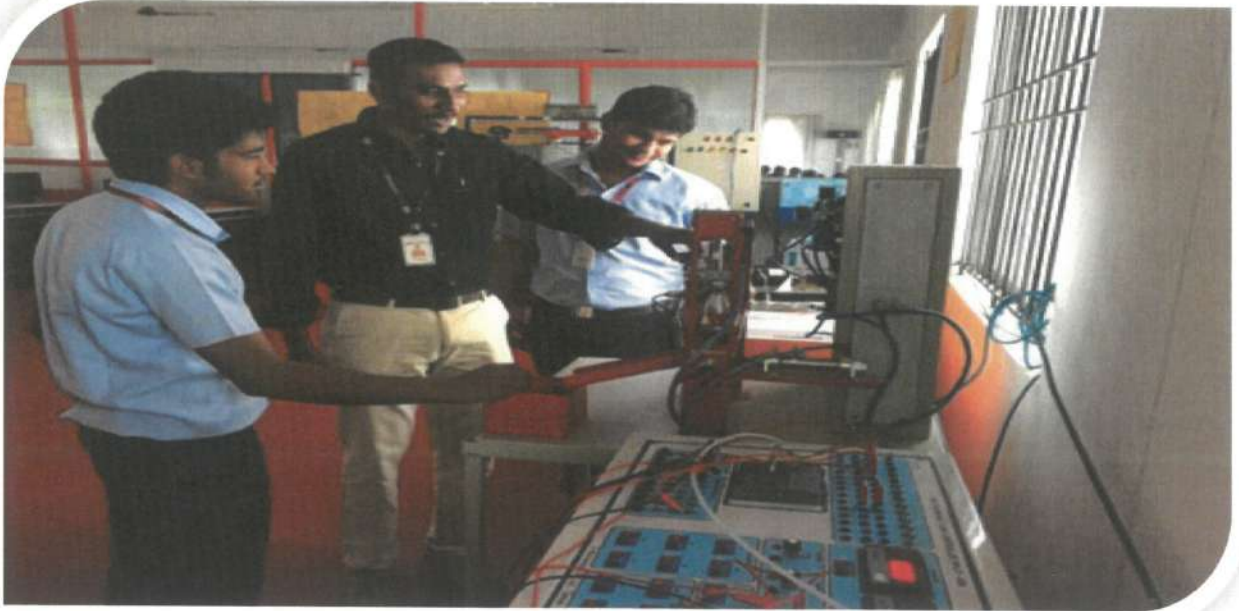


Criterion II  
Teaching-Learning and Evaluation





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Criterion II  
Teaching-Learning and Evaluation

**B.Tech Artificial Intelligence and Machine Learning**

**LIST OF PRACTICAL COURSES**

S.No	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19HE1101	Technical English	HS	2	1	0	3	25	75	100
2	19MA1101	Calculus	BS	3	1	0	4	25	75	100
<b>THEORY &amp; LAB COMPONENT</b>										
3	19PH1151	Applied Physics	BS	2	0	2	3	50	50	100
4	19CY1151	Chemistry for Engineers	BS	2	0	2	3	50	50	100
5	19AI1152	Object oriented programming using Python	IC	2	0	2	3	50	50	100
6	19EC1154	Basics of Electron devices and Electric Circuits	ES	2	0	2	3	50	50	100
<b>PRACTICAL</b>										
7	19HE1071R	Language Competency Enhancement Course - I	HS	1	0	0	1	100	0	100
<b>MANDATORY</b>										
8	19MC1191	Induction Program	MC	0	0	0	0	0	0	0
<b>Total Credits</b>				14	2	8	20	350	350	700

**SEMESTER II**

S.No	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19HE2101	Business English for Engineers	HS	2	1	0	3	25	75	100
2	19MA2104	Differential Equations And Linear Algebra	BS	3	1	0	4	25	75	100
<b>THEORY &amp; LAB COMPONENT</b>										
3	19PH2151	Material Science	BS	2	0	2	3	50	50	100
4	19CY2151	Environmental Studies	BS	2	0	2	3	50	50	100
5	19AI2152	Java Fundamentals	IC	2	0	2	3	50	50	100
6	19ME2154	Engineering Graphics	ES	1	0	4	3	50	50	100



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PRACTICAL										
7	19ME2001	Engineering Practices	ES	0	0	4	2	50	50	100
8	19HE2071R	Language Competency Enhancement Course - II	HS	1	0	0	1	100	0	100
Total Credits				13	2	14	22	400	400	800

**SEMESTER III**

S.No	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
THEORY										
1	19MA3104	Probability and Statistics	BS	3	1	0	4	25	75	100
2	19AI3201	Data Structures and Algorithms	PC	3	0	0	3	25	75	100
3	19AI3202	Foundations of Artificial Intelligence	PC	3	0	0	3	25	75	100
THEORY & LAB COMPONENT										
4	19AI3251	Digital Principles and System Design	PC	3	0	2	4	50	50	100
5	19AI3252	Clean Coding and Devops	IC	2	0	2	3	50	50	100
PRACTICAL										
6	19AI3001	Data Structures and Algorithms Laboratory	PC	0	0	3	1.5	50	50	100
7	19AI3002	Artificial Intelligence Laboratory	PC	0	0	3	1.5	50	50	100
MANDATORY										
8	19AC3191	Constitution of India	AC	2	0	0	0	0	0	0
Total Credits				16	1	10	20	275	425	700

**SEMESTER IV**

S.No	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
THEORY										
1	19AI4201	Database Management System	PC	3	0	0	3	25	75	100
2	19AI4202	Computer Architecture and Organization	PC	3	0	0	3	25	75	100





**Criterion II  
Teaching-Learning and Evaluation**

3	19AI4203	Design Thinking	IC	3	0	0	3	25	75	100
<b>THEORY &amp; LAB COMPONENT</b>										
4	19AI4251	Operating Systems	PC	2	0	2	3	50	50	100
5	19AI4252	Introduction to Machine Learning	PC	3	0	2	4	50	50	100
<b>PRACTICAL</b>										
6	19AI4001	Database Management System Laboratory	PC	0	0	3	1.5	50	50	100
7	19AI4002	Design Thinking Laboratory	IC	0	0	3	1.5	50	50	100
<b>MANDATORY</b>										
8	19AC4191	Value Education - Essence of Indian Traditional Knowledge	AC	2	0	0	0	0	0	0
Total Credits				16	0	10	19	275	425	700

**SEMESTER V**

S.No	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19AI5201	Computer Networks	PC	3	0	0	3	25	75	100
2	19AI5202	Data Analytics	PC	3	0	0	3	25	75	100
3	19HE5181	Management Information System	HS	3	0	0	3	25	75	100
4	19AI53**	Professional Elective- I	PE	3	0	0	3	25	75	100
<b>THEORY &amp; LAB COMPONENT</b>										
5	19AI5251	Object Oriented Analysis and Design	PC	3	0	2	4	50	50	100
6	19AI5252	Predictive Modeling	IC	2	0	2	3	50	50	100
<b>PRACTICAL</b>										
7	19AI5001	Networks Lab	PC	0	0	3	1.5	50	50	100
8	19AI5002	Data Analytics Lab	PC	0	0	3	1.5	50	50	100
9	19CS5701	MOOC / Industrial Training / Seminar	EEC	0	0	2	1	100		100
Total Credits				17	0	12	23	400	500	900





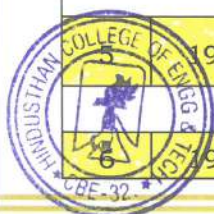
**Criterion II  
Teaching-Learning and Evaluation**

**SEMESTER VI**

S.No	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19AI6201	Theory of Computation	PC	3	0	0	3	25	75	100
2	19AI6202	Business Intelligence	IC	3	0	0	3	25	75	100
3	19AI6203	Natural Language Processing	PC	3	0	0	3	25	75	100
4	19AI63**	Professional Elective- II	PE	3	0	0	3	25	75	100
5	19**64**	Open Elective I	OE	3	0	0	3	25	75	100
<b>THEORY &amp; LAB COMPONENT</b>										
6	19AI6251	AI Analyst	IC	2	0	3	3.5	50	50	100
<b>PRACTICAL</b>										
7	19AI6001	Natural Language Processing Lab	PC	0	0	3	1.5	50	50	100
8	19AI6801	Mini Project	EEC	0	0	4	2	50	50	100
Total Credits				17	0	10	22	275	525	800

**SEMESTER VII**

S.No	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19AI7201	Cloud Computing	PC	3	0	0	3	25	75	100
2	19AI7202	Data Visualization	IC	3	0	0	3	25	75	100
3	19AI7203	Ethics and Policy Issues in AI Computing	PC	2	0	0	2	25	75	100
3	19AI73**	Professional Elective-III	PE	3	0	0	3	25	75	100
4	19**74**	Open Elective II	OE	3	0	0	3	25	75	100
<b>THEORY &amp; LAB COMPONENT</b>										
	19AI7251	Deep Learning Techniques	PC	3	0	2	4	50	50	100
<b>PRACTICAL</b>										
	19AI7001	Cloud Computing Lab	PC	0	0	3	1.5	50	50	100



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7	19AI7002	Data Visualization Lab	IC	0	0	3	1.5	50	50	100
Total Credits				17	0	8	21	275	525	800

SEMESTER VIII

S.No	Course Code	Course Title	Course Category	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>										
1	19AI83**	Professional Elective- IV	PE	3	0	0	3	25	75	100
2	19AI83**	Professional Elective- V	PE	3	0	0	3	25	75	100
<b>PRACTICAL</b>										
3	19AI8901	Project Work	EEC	0	0	24	12	100	100	200
Total Credits				6	0	24	18	150	250	400

**List of Labs**

Multimedia and Networks Laboratory  
RDBMS & CASE Tools Laboratory  
Programming Laboratory  
Networking and OS Laboratory





Criterion II  
Teaching-Learning and Evaluation





**Hindusthan College of Engineering and Technology  
Coimbatore 641 032**

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Criterion II  
Teaching-Learning and Evaluation

**B.Tech Chemical Engineering**

LIST OF PRACTICAL COURSES

SEMESTER I

S.N o	Course Code	Course Title	Typ e	L	T	P	C	CI A	ES E	TOTA L
<b>THEORY &amp; LAB COMPONENT</b>										
1	19PH1151	Applied Physics	BS	2	0	2	3	25	75	100
2	19CY1151	Chemistry for Engineers	BS	2	0	2	3	25	75	100
3	19CS1151	Python Programmin g and Practices	ES	2	0	2	3	25	75	100
4	19ME115 2	Engineering Drawing	ES	1	0	4	3	25	75	100
<b>PRACTICAL</b>										
5	19AC1191	Induction Program	MC	0	0	0	0	0	0	0

SEMESTER II

S.N o	Course Code	Course Title	Typ e	L	T	P	C	CI A	ES E	TOTA L
<b>THEORY &amp; LAB COMPONENT</b>										
1	19PH2151	Material Science	BS	2	0	2	3	25	75	100
2	19CY2151	Environment al Studies	BS	2	0	2	3	25	75	100
<b>PRACTICAL</b>										
3	19ME2001	Engineering Practices Lab	ES	0	0	4	2	50	50	100
4	19HE2071 / 19HE2071 R	Language Competency Enhancement Course-II	HS	1	0	0	1	10 0	0	100

SEMESTER III





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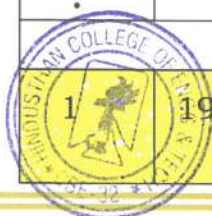
S.No	Course Code	Course Title	Type	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY AND LAB COMPONENT</b>										
1	19CH3251	Analytical Instruments for Analysis	PC	2	0	2	3	50	50	100
<b>PRACTICAL</b>										
2	19CH3001	Fluid Mechanics Lab	PC	0	0	3	1.5	50	50	100
3	19CH3002	Chemical Analysis Lab	PC	0	0	3	1.5	50	50	100

**SEMESTER IV**

S.No	Course Code	Course Title	Type	L	T	P	C	CI A	ES E	TOTAL
<b>THEORY AND LAB COMPONENT</b>										
1	19CH4251	Mechanical Operations	PC	3	0	2	4	50	50	100
2	19MA4153	Applied Probability Statistics	BS	3	0	2	4	50	50	100
<b>PRACTICAL</b>										
3	19CH4001	Heat Transfer Lab	PC	0	0	3	1.5	50	50	100
4	19CH4002	Petrochemical Analysis Lab	PC	0	0	3	1.5	50	50	100

**SEMESTER V**

S.No	Course Code	Course Title	Type	L	T	P	C	CI A	ES E	TOTAL
<b>THEORY AND LAB COMPONENT</b>										
1	19CH5251	Pollution Control Technologie	PC	2	0	2	3	50	50	100





**Criterion II  
Teaching-Learning and Evaluation**

		s								
<b>PRACTICAL</b>										
2	19CH5001	Mass Transfer Lab	PC	0	0	3	1.5	50	50	100
3	19CH5002	Process Control Lab	PC	0	0	3	1.5	50	50	100

**SEMESTER VI**

S.No.	Course Code	Course Title	Type	L	T	P	C	CI A	ES E	TOTAL
<b>THEORY WITH LAB COMPONENT</b>										
1	19CH6251	Fluidization Engineering	PC	2	0	2	3	50	50	100
<b>PRACTICAL</b>										
2	19CH6001	Chemical Reaction Engineering Lab	PC	0	0	4	2	50	50	100
3	19CH6701	Internship/Industrial Training/Skill Development Course	EEC	0	0	0	1	0	100	100

**SEMESTER VII**

S.No.	Course Code	Course Title	Type	L	T	P	C	CI A	ES E	TOTAL
<b>THEORY WITH LAB COMPONENT</b>										
1	19CH7251	Biochemical Engineering	PC	2	0	2	3	50	50	100
<b>PRACTICAL</b>										
2	19CH7001	Design and Simulation Lab	PC	0	0	3	1.5	50	50	100
3	19CH7002	Computational Fluid Dynamics Lab	PC	0	0	3	1.5	50	50	100
	19CH7901	Project Work - Phase I	EEC	0	0	4	2	50	50	100



**Criterion II  
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**SEMESTER VIII**

S.No	Course Code	Course Title	Type	L	T	P	C	CI A	ES E	TOTAL
1	19CH890 1	Project Work – Phase II	EEC	0	0	2 4	1 2	10 0	10 0	200

**List of Labs:**

- Chemical Analysis Laboratory
- Petrochemical Analysis Laboratory
- Biochemical and Waste Water Analysis Lab
- Mechanical Operations Laboratory
- Mechanical Operations Laboratory
- Heat Transfer Laboratory
- Mass Transfer Laboratory
- Chemical Reaction Engineering Laboratory
- Process Instrumentation and Control Laboratory
- Design and Simulation Laboratory
- Computational Fluid Dynamics Laboratory





Criterion II  
Teaching-Learning and Evaluation



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Cycle 2**

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**Criterion II  
Teaching-Learning and Evaluation**

**B.Tech Food Technology**

**REGULATION – 2016**

(For the students admitted during the academic year 2020- 2021 and onwards)

S.No.	COURSE CODE	COURSE TITLE	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>									
1	16MA1101	Engineering Mathematics – I (Matrices and calculus)	3	2	0	4	25	75	100
2	16PH1101	Engineering Physics	3	0	0	3	25	75	100
3	16CY1101	Engineering Chemistry	3	0	0	3	25	75	100
4	16HE1101	Essential English for Engineers – I	3	2	0	4	25	75	100
5	16GE1103	Problem Solving and Python Programming	3	0	0	3	25	75	100
6	16GE1102	Engineering Graphics	2	0	4	4	25	75	100
<b>PRACTICAL</b>									
7	16PS1001	Physical Sciences Lab – I	0	0	2	1	50	50	100
8	16GE1004	Problem Solving and Python Programming Lab	0	0	4	2	50	50	100
9	16GE1002	Engineering Practices Lab	0	0	4	2	50	50	100
10	16GE1003	Value Added Course – Language Competency Enhancement Course - I	0	0	0	1	0	50	100
<b>TOTAL</b>			<b>17</b>	<b>4</b>	<b>14</b>	<b>27</b>			<b>1000</b>

**SEMESTER II**

S.No.	COURSE CODE	COURSE TITLE	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>									
1	16MA2101	Engineering Mathematics – II (Vector Calculus, Complex Variables and Laplace Transforms)	3	2	0	4	25	75	100
2	16PH2102	Physics of Materials	3	0	0	3	25	75	100
3	16FT2101	Fundamentals of Biochemistry	3	0	0	3	25	75	100
4	16HE2102	Essential English For Engineers - II	3	2	0	4	25	75	100
5	16GE2101	Engineering Mechanics	3	2	0	4	25	75	100
6	16CY2102	Environmental Science	3	0	0	3	25	75	100
<b>PRACTICAL</b>									
7	16PS2001	Physical Sciences Laboratory – II	0	0	2	1	50	50	100
8	16FT2001	Biochemistry Lab	0	0	4	2	50	50	100
9	16GE2001	Value Added Course – Language Competency Enhancement Course - II	0	0	0	1	0	50	100
<b>TOTAL</b>			<b>18</b>	<b>6</b>	<b>6</b>	<b>25</b>			<b>900</b>



**Criterion II  
Teaching-Learning and Evaluation**

**SEMESTER III**

S.No.	COURSE CODE	COURSE TITLE	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>									
1	16MA3111	Fourier Analysis and Z Transform	3	1	0	4	25	75	100
2	16FT3201	Fluid Mechanics	3	1	0	4	25	75	100
3	16FT3202	Food Process Calculations	3	1	0	4	25	75	100
4	16FT3203	Food Microbiology	3	0	0	3	25	75	100
5	16FT3204	Food Chemistry	3	0	0	3	25	75	100
6	16FT3205	Thermodynamics	3	0	0	3	25	75	100
<b>PRACTICAL</b>									
7	16FT3001	Food Microbiology Laboratory	0	0	4	2	50	50	100
8	16FT3002	Food Chemistry Laboratory	0	0	4	2	50	50	100
<b>TOTAL</b>			<b>18</b>	<b>3</b>	<b>8</b>	<b>25</b>			<b>800</b>

**SEMESTER IV**

S.No.	COURSE CODE	COURSE TITLE	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>									
1	16MA4112	Applied Statistics & Numerical Methods	3	0	2	4	25	75	100
2	16FT4201	Engineering Properties of Food Materials	3	0	0	3	25	75	100
3	16FT4202	Fundamentals of Heat and Mass Transfer	3	1	0	4	25	75	100
4	16FT4203	Food Process Engineering - I	3	1	0	4	25	75	100
5	16FT4204	Food Analysis	3	0	0	3	25	75	100
6	16HE4101	Total Quality Management	3	0	0	3	25	75	100
<b>PRACTICAL</b>									
7	16FT4001	Food Analysis Laboratory	0	0	4	2	50	50	100
8	16FT4002	Heat and Mass transfer Laboratory	0	0	4	2	50	50	100
<b>TOTAL</b>			<b>18</b>	<b>2</b>	<b>10</b>	<b>25</b>			<b>800</b>

**SEMESTER V**

S.No.	COURSE CODE	COURSE TITLE	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>									
1	16FT5201	Food Process Engineering - II	3	1	0	4	25	75	100
2	16FT5202	Food Quality Assurance and Control	3	0	0	3	25	75	100
3	16FT5203	Baking and Confectionery Technology	3	0	0	3	25	75	100
4	16FT5204	Milling Technology for Food Materials	3	0	0	3	25	75	100
5	16FT5205	Fruits and Vegetable Processing Technology	3	0	0	3	25	75	100



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6	16FT53XX	Professional Elective – I	3	0	0	3	25	75	100
<b>PRACTICAL</b>									
7	16FT5001	Baking and Confectionery Technology Laboratory	0	0	4	2	50	50	100
8	16FT5002	Food Process Engineering Laboratory	0	0	4	2	50	50	100
<b>TOTAL</b>			<b>18</b>	<b>1</b>	<b>8</b>	<b>23</b>			<b>800</b>

**SEMESTER VI**

S.No.	COURSE CODE	COURSE TITLE	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>									
1	16FT6201	Dairy Engineering	3	0	0	3	25	75	100
2	16FT6202	Food Packaging	3	0	0	3	25	75	100
3	16FT6203	Poultry, Meat and Fish Process Technology	3	0	0	3	25	75	100
4	16FT6204	Refrigeration and Cold chain Management	3	1	0	4	25	75	100
5	16FT63XX	Professional Elective – II	3	0	0	3	25	75	100
6	16XX6401	Open Elective – I	3	0	0	3	25	75	100
<b>PRACTICAL</b>									
7	16FT6001	Food Packaging and Fruits & Vegetable Processing Laboratory	0	0	4	2	50	50	100
8	16FT6002	Dairy Engineering Laboratory	0	0	4	2	50	50	100
9	16FT6701	Industrial Training	0	0	0	1	0	100	100
<b>TOTAL</b>			<b>18</b>	<b>1</b>	<b>8</b>	<b>24</b>			<b>900</b>

**SEMESTER VII**

S.No.	COURSE CODE	COURSE TITLE	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>									
1	16HE7101	Professional Ethics	3	0	0	3	25	75	100
2	16FT7201	Food Additives	3	0	0	3	25	75	100
3	16FT7202	Plantation crops & Spices Product Technology	3	0	0	3	25	75	100
4	16FT73XX	Professional Elective – III	3	0	0	3	25	75	100
5	16FT73XX	Professional Elective – IV	3	0	0	3	25	75	100
6	16XX7401	Open Elective – II	3	0	0	3	25	75	100
<b>PRACTICAL</b>									
7	16FT7001	Food Process Equipment Design Laboratory	0	0	4	2	50	50	100
8	16FT7801	Mini Project	0	0	4	2	50	50	100
<b>TOTAL</b>			<b>18</b>	<b>0</b>	<b>8</b>	<b>22</b>			<b>800</b>

**Criterion II  
Teaching-Learning and Evaluation**

**SEMESTER VIII**

S.No	COURSE CODE	COURSE TITLE	L	T	P	C	CIA	ESE	TOTAL
<b>THEORY</b>									
1	16FT83XX	Professional Elective – V	3	0	0	3	25	75	100
2	16FT83XX	Professional Elective – VI	3	0	0	3	25	75	100
<b>PRACTICAL</b>									
4	16FT8901	Project	0	0	20	10	100	100	200
<b>TOTAL</b>			<b>6</b>	<b>0</b>	<b>20</b>	<b>16</b>			<b>400</b>

**List of Labs**

- Food Microbiology
- Food Analysis and Quality Control Laboratory
- Food Process Equipment Design
- Food Production Analysis Laboratory
- Baking and Confectionery Technology
- Dairy Engineering Laboratory
- Food Packaging Laboratory
- Fruits & Vegetable Processing Laboratory
- Food Chemistry Laboratory
- Food Analysis and Quality Control Laboratory
- Unit Operations in Food Processing Laboratory





Criterion II  
Teaching-Learning and Evaluation



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**Criterion II  
Teaching-Learning and Evaluation**

**B.Tech Information Technology**

**LIST OF PRACTICAL COURSES  
SEMESTER I**

S.No.	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
1	16MA1101	Engineering Mathematics-I	3	2	0	4	25	75	100
2	16PH1101	Engineering Physics	3	0	0	3	25	75	100
3	16CY1101	Engineering Chemistry	3	0	0	3	25	75	100
4	16HE1101R	Essential English for Engineers -I	3	2	0	4	50	50	100
5	16GE1103	Problem Solving and Python Programming	3	0	0	3	25	75	100
6	16EC1202	Basics of Electronics Engineering	3	2	0	4	25	75	100
7	16PS1001	Physical Sciences Laboratory - I	0	0	2	1	50	50	100
8	16GE1004	Problem Solving and Python Programming Lab	0	0	4	2	50	50	100
9	16GE1002	Engineering Practices Laboratory	0	0	4	2	50	50	100
10	16GE1003	Value Added Course : Language Competency Enhancement Course-I	0	0	0	1	0	100	100

**SEMESTER II**

S.No.	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
1	16MA2102	Engineering Mathematics-II	3	2	0	4	25	75	100
2	16PH2102	Physics of Materials	3	0	0	3	25	75	100
3	16CY2102	Environmental Sciences	3	0	0	3	25	75	100
4	16HE2102R	Essential English for Engineers - II	3	2	0	4	50	50	100
5	16GE2102	Engineering Graphics	2	0	4	4	25	75	100
6	16IT2202	Programming in C and C++	3	0	0	3	25	75	100
7	16PS2001	Physical Sciences Laboratory - II	0	0	2	1	50	50	100
8	16IT2002	Programming in C and C++ Laboratory	0	0	4	2	50	50	100
9	16GE2001	Value Added Course : Language Competency Enhancement Course-II	0	0	0	1	0	100	100

**SEMESTER III**

S.No.	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
1	16MA3105	Discrete Mathematics and Graph Theory	3	1	0	4	25	75	100
2	16IT3201	Digital Principles And System Design	3	0	2	4	50	50	100
3	16IT3202	Data Structures	3	0	0	3	25	75	100
4	16IT3203	Database Management Systems	3	0	0	3	25	75	100
5	16IT3204	Operating System	3	0	0	3	25	75	100
6	16IT3001	Data Structures Laboratory	0	0	4	2	50	50	100





**Criterion II  
Teaching-Learning and Evaluation**

7	16IT3002	Operating Systems Laboratory	0	0	4	2	50	50	100
8	16IT3003	Database Management Systems Laboratory	0	0	4	2	50	50	100

**SEMESTER IV**

S.No.	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
1	16MA4108	Probability And Queuing Theory	3	1	0	4	25	75	100
2	16IT4201	Java Programming	3	0	0	3	25	75	100
3	16IT4202	Design and Analysis of Algorithm	3	0	0	3	25	75	100
4	16IT4203	Software Analysis and Design	3	0	0	3	25	75	100
5	16IT4204	Computer Architecture	3	0	0	3	25	75	100
6	16IT4205	Information Theory and Coding Techniques	3	0	0	3	25	75	100
7	16IT4001	Java Programming Laboratory	0	0	4	2	50	50	100
8	16IT4002	Algorithms Lab	0	0	4	2	50	50	100
9	16IT4003	Case Tools Lab	0	0	4	2	50	50	100

**SEMESTER V**

S.No.	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
1	16IT5201	Computer Networks	3	0	0	3	25	75	100
2	16IT5202	Web Technology	3	0	0	3	25	75	100
3	16IT5203	Information Security	3	0	0	3	25	75	100
4	16IT5204	Theory Of Computation	3	0	0	3	25	75	100
5	16IT53XX	<b>Professional Elective-I</b>	3	0	0	3	25	75	100
6	16IT5001	Network Laboratory	0	0	4	2	50	50	100
7	16IT5002	Web Technology Laboratory	0	0	4	2	50	50	100
8	16IT5701	Technical Seminar	0	0	4	2	50	50	100

**SEMESTER VI**

S.No.	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
1	16IT6201	Mobile Computing	3	0	2	4	50	50	100
2	16IT6202	Microcontrollers and Embedded Systems	3	0	0	3	25	75	100
3	16IT6203	Software Testing and Quality Assurance	3	0	0	3	25	75	100
4	16IT63XX	<b>Professional Elective II</b>	3	0	0	3	25	75	100
5	16XX64XX	<b>Open Elective I</b>	3	0	0	3	25	75	100
6	16IT6001	Embedded Systems Laboratory	0	0	4	2	50	50	100
7	16IT6002	Open Source Software Laboratory	0	0	4	2	50	50	100
8	16IT6801	Mini Project	0	0	6	3	50	50	100





**Criterion II  
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**SEMESTER VII**

S.No.	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
1	16IT7201	Data Analytics	3	0	0	3	25	75	100
2	16IT7202	Distributed And Cloud Computing	3	0	0	3	25	75	100
3	16IT7203	Internet of Things	3	0	0	3	25	75	100
4	16IT73XX	Professional Elective III	3	0	0	3	25	75	100
5	16IT73XX	Professional Elective IV	3	0	0	3	25	75	100
6	16XX74XX	Open Elective II	3	0	0	3	25	75	100
7	16IT7001	Application Development Laboratory	0	0	4	2	50	50	100
8	16IT7002	Cloud Computing Laboratory	0	0	4	2	50	50	100
9	16IT7901	Project Work - Phase I	0	0	4	2	50	50	100

**SEMESTER VIII**

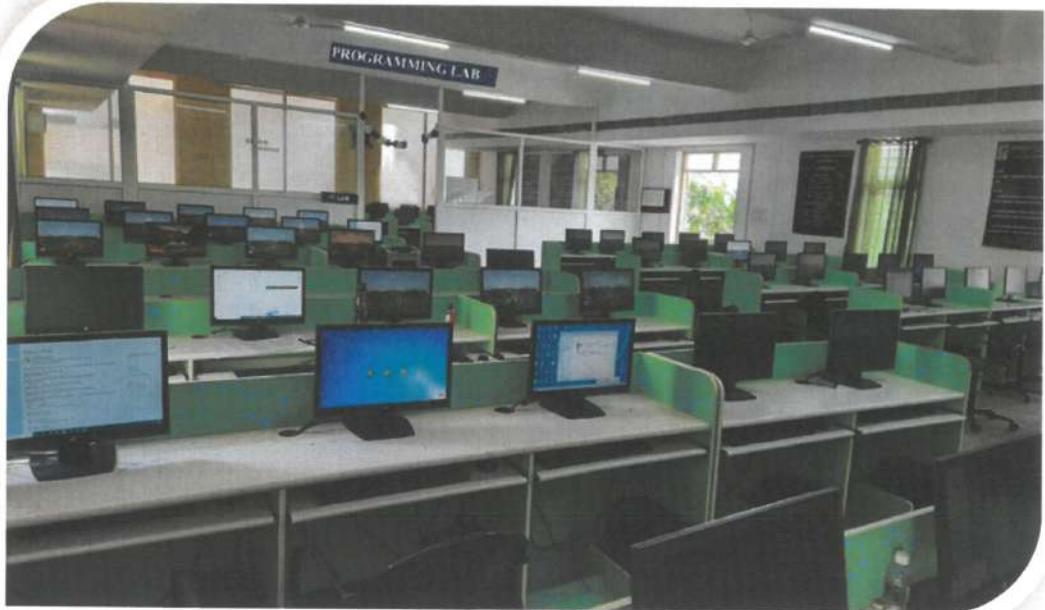
S.No.	Course Code	Course Title	L	T	P	C	CIA	ESE	TOTAL
1	16IT83XX	Professional Elective V	3	0	0	3	25	75	100
2	16IT83XX	Professional Elective VI	3	0	0	3	25	75	100
3	16IT8902	Project Work – Phase II	0	0	20	10	100	100	200

**List of Labs:**

- Object Oriented Programming Laboratory
- Data Structures and Algorithms Laboratory
- Java Programming Laboratory
- Case Tools Laboratory
- Database Base Management System Laboratory
- Web Technology Laboratory
- Network Laboratory
- Operating Systems Laboratory
- Cloud Computing Laboratory
- Application Development Laboratory



Criterion II  
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Criterion II  
Teaching-Learning and Evaluation



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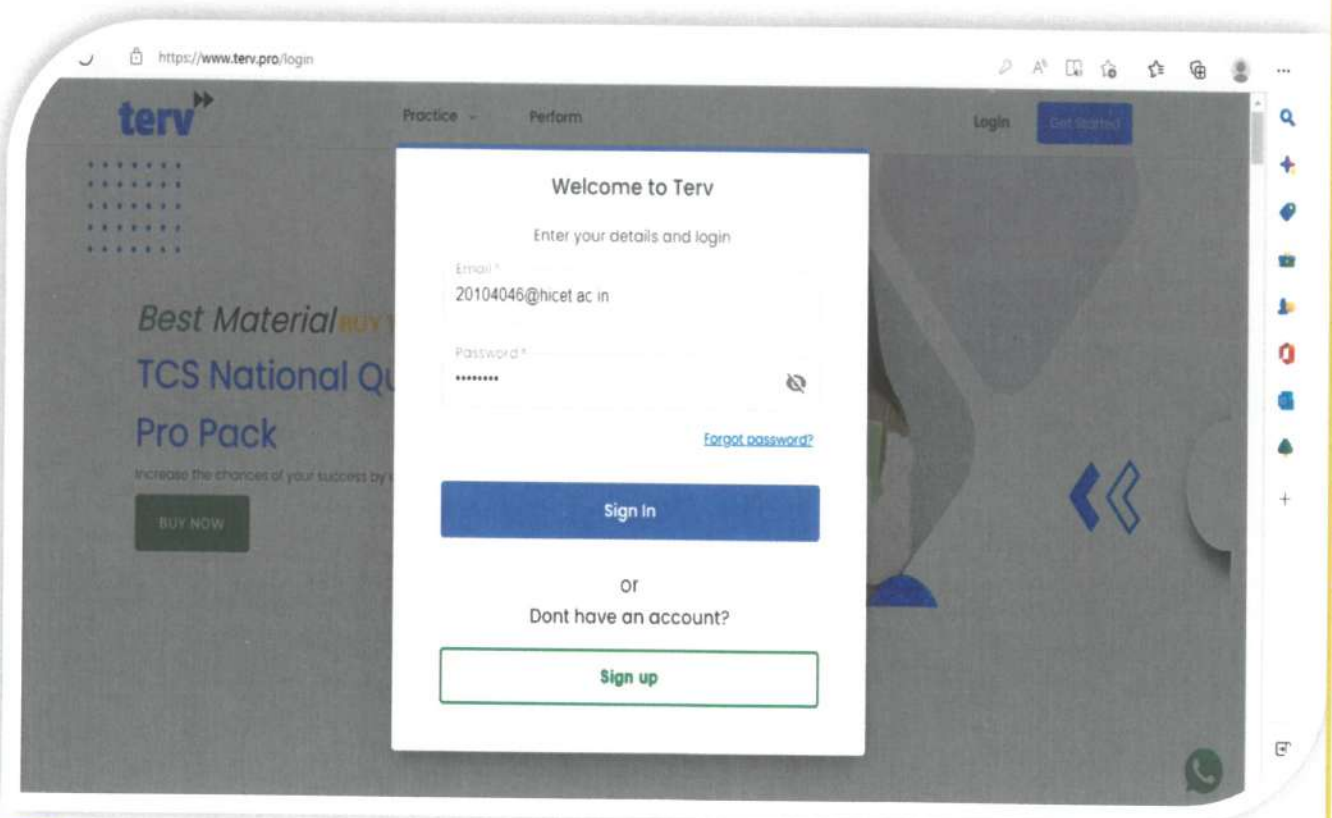


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**Learning -by- Doing: Terv Practice**

Terv, an immersive Learning solution to learn coding in C, C++, Java, JavaScript, Python, and GO with guided Video-based learning support. An Interactive, Industry relevant Immersive Coding Simulator and a learning Platform that gives a near life coding experience to the learners, supporting 6 programming languages. There are over 1000+ curated coding questions on various difficulty level grouped by topics and company papers, unlimited practice for students supported by Hints, solutions and 20+ test cases.

**Objective:** Code to Skill - Code to build an elite global career

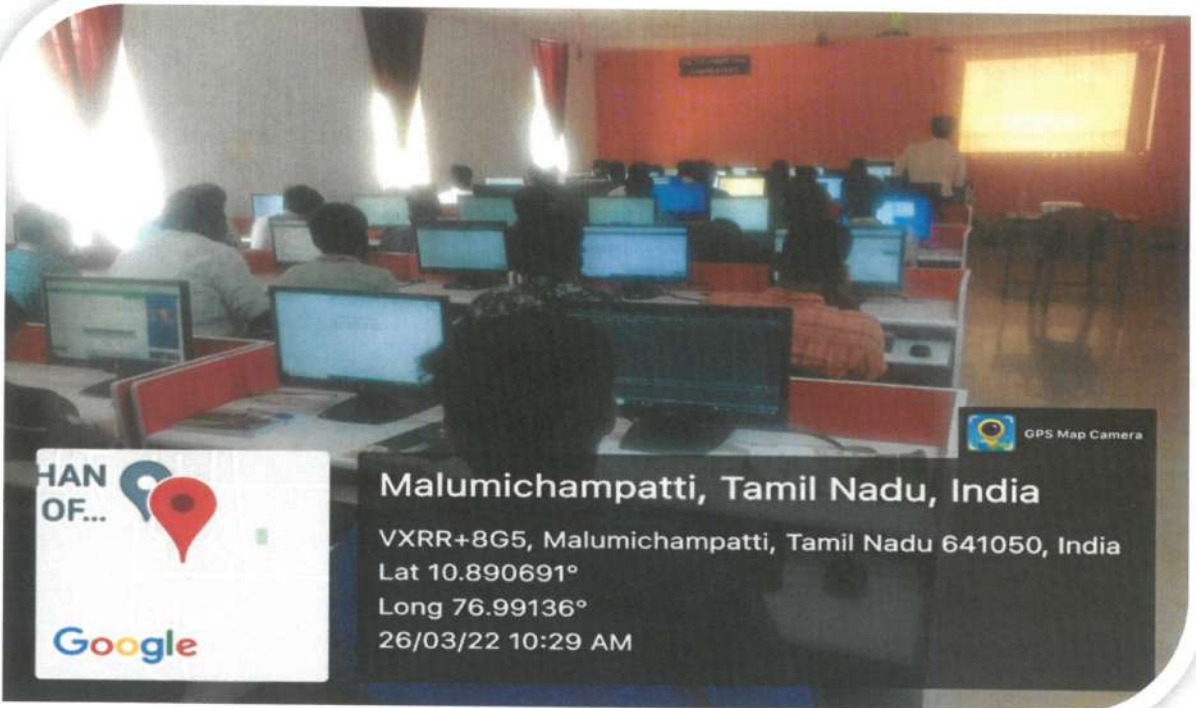




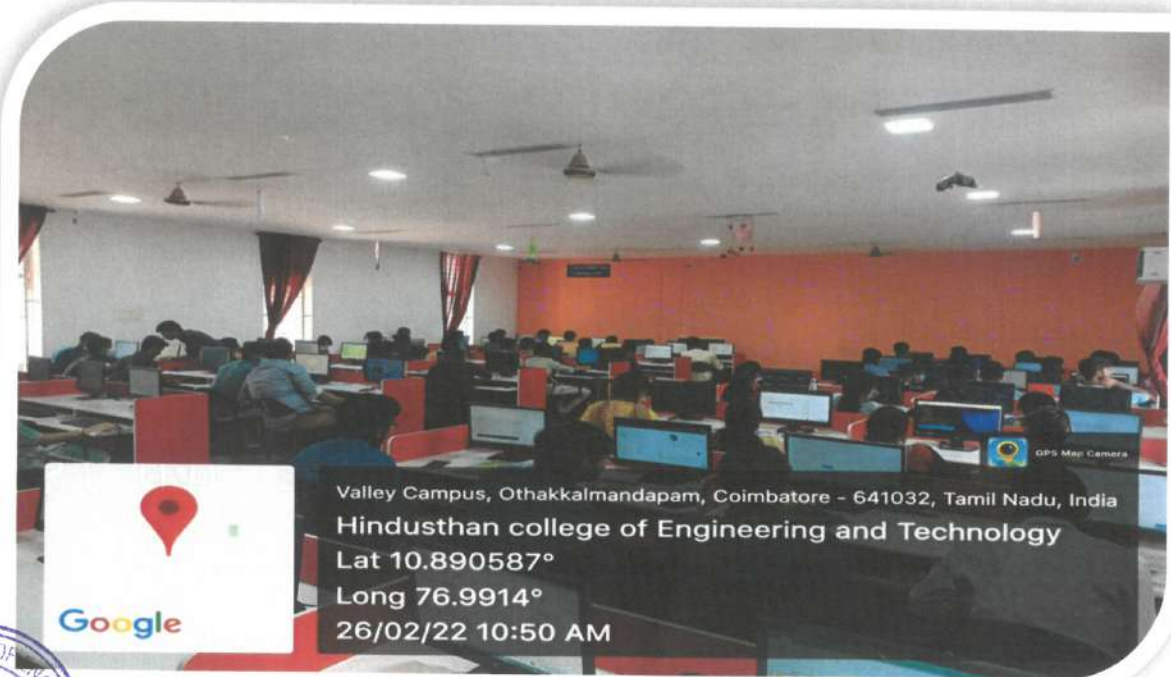
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Coimbatore 641 032**

**NAAC  
SSR  
Cycle 2**

**Criterion II  
Teaching-Learning and Evaluation**



**Malumichampatti, Tamil Nadu, India**  
VXRR+8G5, Malumichampatti, Tamil Nadu 641050, India  
Lat 10.890691°  
Long 76.99136°  
26/03/22 10:29 AM



**Valley Campus, Othakkalmandapam, Coimbatore - 641032, Tamil Nadu, India**  
**Hindusthan college of Engineering and Technology**  
Lat 10.890587°  
Long 76.9914°  
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**Principal**

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