

**GROUP-A  
1<sup>ST</sup> SEMESTER**

Course		Contact Hrs.			Marks			Credits
Code	Name	L	T	P	Internal	External	Total	
BPHYS2-101	Physics (Electromagnetism)	3	1	0	40	60	100	4
BMATH2-101	Mathematics-I (Calculus and Linear Algebra)	3	1	0	40	60	100	4
BMECE0-101	Engineering Graphics & Design	1	0	0	40	60	100	1
BELEE0-101	Basics Electrical Engineering	3	1	0	40	60	100	4
BPHYS2-102	Physics (Electromagnetism) Lab.	0	0	2	60	40	100	1
BMECE0-102	Engineering Graphics & Design Lab.	0	0	4	60	40	100	2
BELEE0-102	Basics Electrical Engineering Lab.	0	0	2	60	40	100	1
BHUMA0-104	Drug Abuse: Problem, Management and Prevention	3	0	0	100	0	100	0
<b>Total</b>		<b>13</b>	<b>3</b>	<b>8</b>	<b>440</b>	<b>360</b>	<b>800</b>	<b>17</b>

Note:

1. There will be Induction Programme of 3 weeks before start of normal classes.
2. Drug Abuse: Problem, Management and Prevention is a non-credit Course; however, it is necessary to secure at least E grade in it.

**2<sup>ND</sup> SEMESTER**

Course		Contact Hrs.			Marks			Credits
Code	Name	L	T	P	Internal	External	Total	
BCHEM0-101	Chemistry-I	3	1	0	40	60	100	4
BMATH2-201	Mathematics-II (Calculus, Ordinary Differential Equations and Complex Variable)	3	1	0	40	60	100	4
BHUMA0-101	English	2	0	0	40	60	100	2
BCSCE0-101	Programming for Problem Solving	3	0	0	40	60	100	3
BCHEM0-102	Chemistry-I Lab.	0	0	2	60	40	100	1
BHUMA0-102	English Lab.	0	0	2	60	40	100	1
BCSCE0-102	Programming for Problem Solving Lab.	0	0	4	60	40	100	2
BMFPR0-101	Manufacturing Practices	1	0	4	60	40	100	3
BHUMA0-103	Human Values & Professional Ethics	3	0	0	100	0	100	0
<b>Total</b>		<b>15</b>	<b>2</b>	<b>12</b>	<b>500</b>	<b>400</b>	<b>900</b>	<b>20</b>

Note:

1. Human Values & Professional Ethics is a non-credit Course; however, it is necessary to secure at least E grade in it.
2. Marks of 4 Week Manufacturing Practices Training during Summer Vacation will be included in 3<sup>rd</sup> Semester

**GROUP-B  
1<sup>ST</sup> SEMESTER**

Course		Contact Hrs.			Marks			Credits
Code	Name	L	T	P	Internal	External	Total	
BCHEM0-101	Chemistry-I	3	1	0	40	60	100	4
BMATH2-101	Mathematics-I (Calculus and Linear Algebra)	3	1	0	40	60	100	4
BHUMA0-101	English	2	0	0	40	60	100	2
BCSCE0-101	Programming for Problem Solving	3	0	0	40	60	100	3
BCHEM0-102	Chemistry-I Lab.	0	0	2	60	40	100	1
BHUMA0-102	English Lab.	0	0	2	60	40	100	1
BCSCE0-102	Programming for Problem Solving Lab.	0	0	4	60	40	100	2
BMFPR0-101	Manufacturing Practices	1	0	4	60	40	100	3
BHUMA0-103	Human Values & Professional Ethics	3	0	0	100	0	100	0
<b>Total</b>		<b>15</b>	<b>2</b>	<b>12</b>	<b>500</b>	<b>400</b>	<b>900</b>	<b>20</b>

Note:

1. There will be Induction Programme of 3 weeks before start of normal classes.
2. Human Values & Professional Ethics is a non-credit Course; however, it is necessary to secure at least E grade in it.

**2<sup>ND</sup> SEMESTER**

Course		Contact Hrs.			Marks			Credits
Code	Name	L	T	P	Internal	External	Total	
BPHYS2-101	Physics (Electromagnetism)	3	1	0	40	60	100	4
BMATH2-201	Mathematics-II (Calculus, Ordinary Differential Equations and Complex Variable)	3	1	0	40	60	100	4
BMECE0-101	Engineering Graphics & Design	1	0	0	40	60	100	1
BELEE0-101	Basics Electrical Engineering	3	1	0	40	60	100	4
BPHYS2-102	Physics (Electromagnetism) Lab.	0	0	2	60	40	100	1
BMECE0-102	Engineering Graphics & Design Lab.	0	0	4	60	40	100	2
BELEE0-102	Basics Electrical Engineering Lab.	0	0	2	60	40	100	1
BHUMA0-104	Drug Abuse: Problem, Management and Prevention	3	0	0	100	0	100	0
<b>Total</b>		<b>13</b>	<b>3</b>	<b>8</b>	<b>440</b>	<b>360</b>	<b>800</b>	<b>17</b>

Note:

1. Drug Abuse: Problem, Management and Prevention is a non-credit Course; however, it is necessary to secure at least E grade in it.
2. Marks of 4 Week Manufacturing Practices Training during Summer Vacation will be included in 3<sup>rd</sup> Semester

### Course Outcomes

1. Upon completion of this course, the students will gain knowledge of the different manufacturing processes which are commonly employed in the industry, to fabricate components using different materials.

### Workshop Practice (70 Hrs.)

1. Machine shop (10 Hrs.)
2. Fitting shop (8 Hrs.)
3. Carpentry (6 Hrs.)
4. Electrical & Electronics (8 Hrs.)
5. Welding shop (8 Hrs. (Arc welding 4 Hrs. + Gas welding 4 Hrs.))
6. Casting (8 Hrs.)
7. Sheet Metal Operations (10 Hrs.)
8. Smithy (6 Hrs.)
9. Plastic moulding & Glass Cutting (6 Hrs.)
10. Examinations could involve the actual fabrication of simple components, utilizing one or more of the techniques covered above.

### Laboratory Outcomes

1. Upon completion of this laboratory course, students will be able to fabricate components with their own hands.
2. They will also get practical knowledge of the dimensional accuracies and dimensional tolerances possible with different manufacturing processes.
3. By assembling different components, they will be able to produce small devices of their interest.

## HUMAN VALUES AND PROFESSIONAL ETHICS

Subject Code: BHUM0-103

L T P C  
3 0 0 0

Duration: 30 Hrs.

### UNIT-I (8 Hrs.)

Meaning of values, Values as social fact, Universal values – equality, justice, freedom/ liberty, inclusion. Distinction between social and culture values and values associated with crafts and occupations. Work and leisure as values – Marx and Veblen

### UNIT-II (9 Hours)

Values, morality, ethics and their relation with Religion, values as mechanisms of control and coercion. Functional Theory of Values of Talcott Parsons, Theory of Basic Values of Shalom Schwartz, Theory of Protestant Ethic and Capitalism of Max Weber, Bhagwat Gita and Theory of Karma-Dharma, Sikhism and theory of work, dignity of labour, meditation and sharing.

### UNIT-III (7 Hours)

Meaning and types of Professional Ethics, Goals of professional work and their problems, Normative and evaluative elements in professional work, Duties and obligations, Professional rights, Virtues in professional life (honesty, trustworthiness, transparency, competence, integrity and exemplary conduct), Engineering ethics and service ideals.

### UNIT-IV (6 Hours)

Technology for and against mankind and environment- fulfilment of human needs, and industrial disasters: case studies – Bhopal Gas Tragedy, Chernobyl and Fukushima Disasters; Equality at work place: gender discrimination and caste/class-based exclusions.

### Recommended Books

1. Schwartz, H. Shalom, 'An Overview of the Schwartz Theory of Basic Values'. Online Readings in Psychology and Culture. 2 (1). doi:10.9707/2307-0919.1116, 2012.

2. John Berry, Janek, Pandey; Poortinga, Ype 'Handbook of Cross-cultural Psychology', 2<sup>nd</sup> Edn.. Boston, MA: Allyn and Bacon. p. 77. ISBN 9780205160747, **1997**.
3. Timo Airaksinen, 'The Philosophy of Professional Ethics', University of Helsinki, Finland.
4. Manju Jitendra Jain, 'Yes, It's Possible', Kalpna Publications, Mumbai, 2011.

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