

## Academic Course Description

BHARATH University Faculty of Engineering and Technology Department of Mechanical Engineering  <b>BSS601 VALUE EDUCATION AND PROFESSIONAL ETHICS</b> <b>Sixth Semester, 2015-16 (Even Semester)</b>
--

**Course (catalog) description**

This subject is used to teach the philosophy of Life, personal value, social value, mind cultural value and personal health. To teach professional ethical values, codes of ethics, responsibilities, safety, rights and related global issues.

**Compulsory/Elective course:** Compulsory  
 Credit & contact hours : 3 & 45 credits  
 Course Coordinator : Mr.Manjuri Prakash

**Instructors :**

Name of the instructor	Class handling	Office location	Office phone	Email (domain:@ bharathuniv.ac.in)	Consultation
Mr. N. Lenin Rakesh	III Year Mech, Sec 'A'	JR 001,	9789917001	leninrakesh.mech@bharathuniv.ac.in	9.00 to 9.50 am
Mr. Arun V Rejus Kumar	III Year Mech, Sec 'B'	JR 002	9789492493	Karthikeyan.mech@bharathuniv.ac.in	10.50 to 11.40
Mr.S.Jeeva Bharathi	III Year Mech, Sec 'E' & F	JR 101 JR 102	9500015643	jeevabharathis.mech@bharathuniv.ac.in	9.50 to 10.40

**Relationship to other courses:**

Pre –requisites : BBA008- Total Quality Management

Assumed knowledge : The students will have a physics and mathematics background obtained at a high school (or equivalent) level. In particular, working knowledge of basic mathematics including differentiation, integration and probability theories are assumed.

Following courses : nil

**Syllabus Contents**

**UNIT I : PHILOSOPHY OF LIFE AND INDIVIDUAL QUALITIES**

**9 HOURS**

Human Life on Earth - Purpose of Life, Meaning and Philosophy of Life. The Law of Nature – Protecting Nature /Universe. Basic Culture - Thought Analysis - Regulating desire - Guarding against anger - To get rid of Anxiety – The Rewards of Blessing - Benevolence of Friendship - Love and Charity - Self – tranquility/Peace

**UNIT II : SOCIAL VALUES (INDIVIDUAL AND SOCIAL WELFARE)**

**9 HOURS**

Family - Peace in Family, Society, The Law of Life Brotherhood - The Pride of Womanhood – Five responsibilities/duties of Man : - a) to himself, b) to his family, c) to his environment, d) to his society, e) to the Universe in his lives, Thriftness (Thrift)/Economics. Health - Education - Governance - People’s Responsibility / duties of the community, World peace.

**UNIT III: MIND CULTURE & TENDING PERSONAL HEALTH****9 HOURS**

Mind Culture - Life and Mind - Bio - magnetism, Universal Magnetism (God –Realization and Self Realization) - Genetic Centre – Thought Action – Short term Memory – Expansiveness – Thought – Waves, Channelising the Mind, Stages - Meditation, Spiritual Value. Structure of the body - the three forces of the body- life body relation, natural causes and unnatural causes for diseases, Methods in Curing diseases

**UNIT IV: ENGINEERING AS SOCIAL EXPERIMENTATION AND ENGINEERS’S RESPONSIBILITIES FOR SAFETY****9 HOURS**

Engineering as Experimentation – Engineer as Responsible Experimenters – Codes of Ethics – The Challenger, case study. Assessment of Safety and Risk – Risk Benefit Analysis and Reducing Risk – The Three Mile Island and Chernobyl case studies.

**UNIT V: ENGINEERS’S RESPONSIBILITIES FOR RIGHTS AND GLOBAL ISSUES****9 HOURS**

Collegiality and Loyalty – Respect for Authority – Collective Bargaining – Confidentiality – Conflicts of Interest – Occupational Crime – Whistle Blowing – Professional Rights – Employee Rights – Intellectual Property Rights (IPR) – Discrimination. Multinational Corporations – Environmental Ethics – Computer Ethics – Weapons Development –Engineers as Managers – Consulting Engineers – Engineers as Expert Eye Witnesses and Advisors – Moral Leadership

**TOTAL PERIODS = 45 HOURS****TEXT BOOKS:**

1. Value Education for Health, Happiness and Harmony, The World Community Service, Centre Vethathiri Publications (Unit 1 – III).
2. Mike W Martin and Roland Schinzing, Ethics In Engineering, Tata Mcgraw Hill, Newyork 2005 (Units IV & V)

**REFERENCE:**

1. Philosophy of Universal Magnetism (Bio - magnetism, Universal Magnetism) The World Community Service Centre Vethathiri Publications (for Unit III)
2. Thirukkural with English Translation of Rev. Dr. G.U. Pope, Uma Publication, 156, Serfoji Nagar, Medical College Road,Thanjavur 613 004 (for Units I - III)
3. R S Nagaarazan, Textbook On Professional Ethics And Human Values, New Age International Publishers, 2006 (for Units IV-V)
4. Charles D Fledderman, Engineering Ethics, Prentice Hall, New Mexico, 2004 (for Units IV-V)
5. [www.waceinc.org/philly2011/conference.../KARSTE~1.PDF](http://www.waceinc.org/philly2011/conference.../KARSTE~1.PDF)

**Computer usage:** Nil**Professional component**

General	-	100%
Basic Sciences	-	0%
Engineering sciences & Technical arts	-	0%
Professional subject	-	0%

**Broad area : Ethics in work area****Test Schedule**

S. No.	Test	Tentative Date	Portions	Duration
1	Cycle Test-1	February 2 <sup>nd</sup> week	Session 1 to 14	2 Periods
2	Cycle Test-2	March 2 <sup>nd</sup> week	Session 15 to 28	2 Periods
3	Model Test	April 3 <sup>rd</sup> week	Session 1 to 45	3 Hrs
4	University Examination	TBA	All sessions / Units	3 Hrs.

## Mapping of Instructional Objectives with Program Outcome

To teach the philosophy of Life, personal value, social value, mind cultural value and personal health. To teach professional ethical values, codes of ethics, responsibilities, safety, rights and related global issues.	Correlates to program outcome		
	H	M	L
1. To learn about philosophy of Life and Individual qualities	e,h	c,g,i	j,k
2. To learn and practice social values and responsibilities	e,h	c,g,i	j,k
3. To learn and practice mind culture, forces acting on the body and causes of diseases and their curing	e,h	c,g,i	j,k
4. To learn more of Engineer as Responsible Experimenter.	c,e,h	g,i	j,k
5. To learn more of Risk and Safety assessment with case studies.	c,e,h	g,i	j,k
6. To learn more of Responsibilities and Rights as Professional and facing Global Challenges	c,e,h	g,i	j,k

H: high correlation, M: medium correlation, L: low correlation

**Draft Lecture Schedule**

Session	Topics	Problem solving (Yes/No)	Text / Chapter
<b>UNIT I PHILOSOPHY OF LIFE AND INDIVIDUAL QUALITIES</b>			
1.	Human Life on Earth, Purpose of Life	No	[T1] Chapter -1,2
2.	Meaning and Philosophy of Life	No	
3.	Law of Nature , Protecting Nature /Universe	No	
4.	Basic Culture - Thought Analysis	No	
5.	Regulating desire - Guarding against anger	No	
6.	To get rid of Anxiety	No	
7.	The Rewards of Blessing	No	
8.	Benevolence of Friendship	No	
9.	Love and Charity - Self – tranquility/Peace	No	
<b>UNIT II SOCIAL VALUES (INDIVIDUAL AND SOCIAL WELFARE)</b>			
10.	Family - Peace in Family	No	[T1] Chapter -3,4
11.	Society, The Law of Life Brotherhood	No	
12.	The Pride of Womanhood	No	
13.	Five responsibilities/duties of Man	No	
14.	a) to himself, b) to his family, c) to his environment	No	
15.	d) to his society, e) to the Universe in his lives	No	
16.	Thriftness (Thrift)/Economics	No	
17.	Health, Education,Governance	No	
18.	People’s Responsibility / duties of the community, World peace	No	
<b>UNIT III MIND CULTURE &amp; TENDING PERSONAL HEALTH</b>			
19.	Mind Culture - Life and Mind	No	[T1] Chapter -5,6
20.	Bio - magnetism, Universal Magnetism (God – Realization and Self Realization)	No	
21.	Genetic Centre – Thought Action	No	
22.	Short term Memory – Expansiveness	No	
23.	Thought – Waves, Channelising the Mind, Stages	No	
24.	Meditation, Spiritual Value. Structure of the body	No	
25.	the three forces of the body- life body relation	No	
26.	natural causes and unnatural causes for diseases	No	
27.	Methods in Curing diseases	No	
<b>UNIT IV ENGINEERING AS SOCIAL EXPERIMENTATION AND ENGINEERS’S RESPONSIBILITIES FOR SAFETY</b>			
28.	Engineering as Experimentation	No	[T2] Chapter -4,5
29.	Engineer as Responsible Experimenters	No	
30.	Codes of Ethics	No	
31.	The Challenger	No	
32.	case study	No	

33.	Assessment of Safety and Risk	No	
34.	Risk Benefit Analysis and Reducing Risk	No	
35.	The Three Mile Island	No	
36.	Chernobyl case studies	No	
<b>UNIT V ENGINEERS'S RESPONSIBILITIES FOR RIGHTS AND GLOBAL ISSUES</b>			
37.	Collegiality and Loyalty – Respect for Authority	No	[T2] Chapter -6,9
38.	Collective Bargaining – Confidentiality	No	
39.	Conflicts of Interest – Occupational Crime	No	
40.	Whistle Blowing – Professional Rights – Employee Rights	No	
41.	Intellectual Property Rights (IPR) – Discrimination	No	
42.	Multinational Corporations – Environmental Ethics – Computer Ethics	No	
43.	Weapons Development –Engineers as Managers	No	
44.	Consulting Engineers – Engineers as Expert Eye Witnesses	No	
45.	Advisors – Moral Leadership	No	

### Teaching Strategies

The teaching in this course aims at establishing a good fundamental understanding of the areas covered using:

- Formal face-to-face lectures
- Small periodic quizzes, to enable you to assess your understanding of the concepts.

### Evaluation Strategies

Cycle Test – I	-	5%
Cycle Test – II	-	5%
Model Test	-	10%
Assignment / Seminar / Online		
Test / Quiz	-	5%
Attendance	-	5%
Final exam	-	70%

---

**Prepared by:** Mr.S.Jeeva Bharathi ,Assistant professor

---

**Addendum**

**ABET Outcomes expected of graduates of B.Tech / MECH / program by the time that they graduate:**

- a) The ability to apply knowledge of mathematics, science, and engineering fundamentals.
- b) The ability to identify, formulate and solve engineering problems.
- c) The ability to design a system, component, or process to meet the desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- d) The ability to design and conduct experiments, as well as to analyze and interpret data
- e) The ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- f) The ability to apply reasoning informed by the knowledge of contemporary issues.
- g) The ability to broaden the education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- h) The ability to understand professional and ethical responsibility and apply them in engineering practices.
- i) The ability to function on multidisciplinary teams.
- j) The ability to communicate effectively with the engineering community and with society at large.
- k) The ability in understanding of the engineering and management principles and apply them in project and finance management as a leader and a member in a team.
- l) The ability to recognize the need for, and an ability to engage in life-long learning.

**Program Educational Objectives**

**PEO1: PREPARATION:**

Mechanical Engineering graduates are enthusiastic to provide strong foundation in mathematical, scientific and engineering fundamentals necessary to analyze, formulate and solve engineering problems in the field of Mechanical Engineering.

**PEO2: CORE COMPETENCE:**

Mechanical Engineering graduates have competence to enhance the skills and experience in defining problems in the field of Mechanical Engineering and Technology design and implement, analyzing the experimental evaluations, and finally making appropriate decisions.

**PEO3: PROFESSIONALISM:**

Mechanical Engineering graduates made competence to enhance their skills and embrace new thrust areas through self-directed professional development and post-graduate training or education.

**PEO4: PROFICIENCY:**

Mechanical Engineering graduates became skilled to afford training for developing soft skills such as proficiency in many languages, technical communication, verbal, logical, analytical, comprehension, team building, inter personal relationship, group discussion and leadership skill to become a better professional.

**PEO5: ETHICS:**

Mechanical Engineering graduates are morally merged to apply the ethical and social aspects of modern Engineering and Technology innovations to the design, development, and usage of new products, machines, gadgets, devices, etc.

<b>Course Teacher</b>	<b>Signature</b>
Mr. N. Lenin Rakesh	
Mr. Arun V Rejus Kumar	
Mr.S.Jeeva Bharathi	

**Course Coordinator**  
Mr.Manjuri Prakash

**HOD/MECH**