

Course Structure for Semester III

B. Tech in Mechanical Engineering / B. Tech. in Mechanical Engineering (Sandwich)

Semester III										
Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				No. of Credits
			L	T	P	CA	MSE	ESE	Total	
BSC7	BTBS301	Engineering Mathematics – III	3	1	-	20	20	60	100	4
PCC1	BTMC302	Fluid Mechanics	3	1	-	20	20	60	100	4
PCC2	BTMC303	Thermodynamics	3	1	-	20	20	60	100	4
ESC10	BTMES304	Materials Science and Metallurgy	3	1	-	20	20	60	100	4
PCC3	BTMCL305	Machine Drawing and CAD Lab	-	-	4	60	-	40	100	2
PCC4	BTMCL306	Mechanical Engineering Lab – I	-	-	4	60	-	40	100	2
HSSMA	BTHM 307	Constitution of India	2				20	20		Audit
PROJ-2	BTES209P	IT – 1 Evaluation	-	-	-	-	-	100	100	1
Total			14	4	8	220	100	440	700	21

BSC = Basic Science Course, ESC = Engineering Science Course, PCC = Professional Core Course

PEC = Professional Elective Course, OEC = Open Elective Course, LC = Laboratory Course

HSSMC = Humanities and Social Science including Management Courses

Course Structure for Semester IV

B. Tech in Mechanical Engineering / B. Tech. in Mechanical Engineering (Sandwich)

Semester IV										
Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				No. of Credits
			L	T	P	CA	MSE	ESE	Total	
PCC 5	BTMC401	Manufacturing Processes – I	3	1	-	20	20	60	100	4
PCC 6	BTMC402	Theory of Machines-I	3	1	-	20	20	60	100	4
HSSMC3	BTHM403	UHV II	3	0	-	20	20	60	100	3
ESC11	BTMES404	Strength of Materials	3	1	-	20	20	60	100	4
PEC 1	BTMPE405A-C	Elective-I	3	-	-	20	20	60	100	3
PCC7	BTMCL406	Mechanical Engineering Lab-II	-	-	4	60	-	40	100	2
PROJ-3	BTMI407	Field Training /Industrial Training (minimum of 4 weeks which can be completed partially in the third and fourth semester or in one semester itself)	-	-	-	-	-	-	-	Credits to be evaluated in Sem V
Total			15	3	4	160	100	340	600	20

BSC = Basic Science Course, ESC = Engineering Science Course, PCC = Professional Core Course

References:

1. Thomas Beven, "Theory of Machines", CBS Publishers and Distributors, Delhi.
2. J. E. Shigely, J. J. Uicker, "Theory of Machines and Mechanisms", Tata McGraw Hill Publications, New York, International Student Edition, 1995.

UHV-II

BTHM403	HSSMC3	UHV II	3-0-0	3 Credits
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Teaching Scheme:	Examination Scheme:
Lecture: 3 hrs/week Tutorial: 0 hr/week	Continuous Assessment: 20 Marks Mid Semester Exam: 20 Marks End Semester Exam: 60 Marks (Duration 03 hrs)

Course Outcomes: At the end of the course, students will be able to:

CO1	To help the students appreciate the essential complementarity between 'VALUES' and 'SKILLS' to ensure sustained happiness and prosperity which are the core aspirations of all human beings.
CO2	To facilitate the development of a Holistic perspective among students towards life and profession
CO3	To highlight the possible implications of Holistic understanding in terms of ethical human conduct, trustful mutually fulfilling human behavior

Mapping of course outcomes with program outcomes

Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												
CO5												
CO6												

Module 1 – Introduction to Value Education

- Understanding Value Education
- Self-exploration as the Process for Value Education
- Continuous Happiness and Prosperity – the Basic Human Aspirations
- Right Understanding, Relationship and Physical Facility
- Happiness and Prosperity – Current Scenario
- Method to Fulfill the Basic Human Aspirations

Module 2 – Harmony in the Human Being

- Understanding Human being as the Co-existence of the Self and the Body
- Distinguishing between the Needs of the Self and the Body
- The Body as an Instrument of the Self
- Understanding Harmony in the Self
- Harmony of the Self with the Body
- Programme to Ensure self-regulation and Health

Module 3 – Harmony in the Family and Society

- Harmony in the Family – the Basic Unit of Human Interaction
- Values in Human-to-Human Relationship
- 'Trust' – the Foundational Value in Relationship
- 'Respect' – as the Right Evaluation
- Understanding Harmony in the Society
- Vision for the Universal Human Order

Module 4 – Harmony in the Nature (Existence)

- Understanding Harmony in the Nature
- Interconnectedness, self-regulation and Mutual Fulfillment among the Four Orders of Nature
- Realizing Existence as Co-existence at All Levels
- The Holistic Perception of Harmony in Existence

Module 5 – Implications of the Holistic Understanding – a Look at Professional Ethics

- Natural Acceptance of Human Values
- Definitiveness of (Ethical) Human Conduct
- A Basis for Humanistic Education, Humanistic Constitution and Universal Human Order
- Competence in Professional Ethics
- Holistic Technologies, Production Systems and Management Models-Typical Case Studies
- Strategies for Transition towards Value-based Life and Profession

READINGS:

Text Book and Teachers Manual

a. The Textbook

A Foundation Course in Human Values and Professional Ethics, R R Gaur, R Asthana, G P Bagaria, 2nd Revised Edition, Excel Books, New Delhi, 2019. ISBN 978-93-87034-47-1

b. The Teacher's Manual

Teachers' Manual for A Foundation Course in Human Values and Professional Ethics, R R Gaur, R Asthana, G P Bagaria, 2nd Revised Edition, Excel Books, New Delhi, 2019. ISBN 978-93-87034-53-2

3.2 Reference Books

1. Jeevan Vidya: Ek Parichaya, A Nagaraj, Jeevan Vidya Prakashan, Amarkantak, 1999.
2. Human Values, A.N. Tripathi, New Age Intl. Publishers, New Delhi, 2004.
3. The Story of Stuff (Book).
4. The Story of My Experiments with Truth - by Mohandas Karamchand Gandhi
5. Small is Beautiful - E. F Schumacher.
6. Slow is Beautiful - Cecile Andrews
7. Economy of Permanence - J C Kumarappa
8. Bharat Mein Angreji Raj – Pandit Sunderlal
9. Rediscovering India - by Dharampal
10. Hind Swaraj or Indian Home Rule - by Mohandas K. Gandhi
11. India Wins Freedom - Maulana Abdul Kalam Azad
12. Vivekananda - Romain Rolland (English)
13. Gandhi - Romain Rolland (English)