Dr. Babasaheb Ambedkar Technological University (Established a University of Technology in the State of Maharashtra)
(Under Maharashtra Act No. XXIX of 2014)
P.O. Lonere, Dist. Raigad, Pin 402 103,
Maharashtra Telephone and Fax. 02140 -275142 www.dbatu.ac.in
www.dbatu.ac.in

CURRICULUM UNDER GRADUATE PROGRAMME FOR B. TECH

ARTIFICIAL INTELLIGENCE & DATA SCIENCE

WITH EFFECT FROM THE ACADEMIC YEAR
SY: 2021-2022
TY: 2022-2023
B.Tech:2023-24

Course Structure for Second Year
B. Tech in Artificial Intelligence & Data Science

Semester IV (Term 4)										
Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				
			L	T	P	CA	MSE	ESE	Total	Credit
PCC3	BTAIC401	Data Analysis	3	1	-	20	20	60	100	4
PCC4	BTAIC402	Database ManagementSystem	3	1	-	20	20	60	100	4
HSSM C3	BTHM403	Basic Human Rights	3	-	-	20	20	60	100	3
BSC8	BTBS404	Probability Theory and Random Processes	3	-	-	20	20	60	100	3
PEC-1	BTAIPE405	Professional ElectiveCourses –I	3	1	-	20	20	60	100	4
	BTAIPE405A	1. Numerical Methods andComputer Programming								
	BTAIPE405B	2. Image Processing &Computer Vision								
	BTAIPE405C	3. Internet of Things &Embedded System								
	BTAIPE405D	4. Programming in JAVA								
LC2	BTAIL406	Data Analysis Lab and Database ManagementSystem Lab	-	-	4	60	-	40	100	2
Seminar	BTAIS407	Seminar - II	-	-	4	60	-	40	100	2
Internship	BTAIP408	Field Training / Internship / Industrial Training - II	-	-	-	-	-	-	-	Audit to be evaluate in V semester
			15	**3**	**8**	**220**	**100**	**380**	**700**	**22**

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

Semester –IV

Basic Human Rights

BTHM403	Basic Human Rights	HSSMC3	3L- 0T -0P	3 Credits

Teaching Scheme	Examination Scheme
Lecture: 3 hrs./week	Continuous Assessment : 20 Marks Mid Semester Exam:20 Marks End Semester Exam: 60 Marks (Duration 03 hrs.)

Pre-Requisites: None

Course Objectives:

1. To train the young minds facing the challenges of the pluralistic society and the rising conflicts and tensions in the name of particularistic loyalties to caste, religion, region and culture.
2. To give knowledge of the major "signposts" in the historical development of human rights, the range of contemporary declarations, conventions, and covenants.
3. To enable them to understand the basic concepts of human rights (including also discrimination, equality, etc.), the relationship between individual, group, and national rights.
4. To develop sympathy in their minds for those who are denied rights.
5. To make the students aware of their rights as well as duties to the nation

Course Outcomes:

On completion of the course, students will be able to:

CO1	Students will be able to understand the history of human rights.
CO2	Students will learn to respect others caste, religion, region and culture.
CO3	Students will be aware of their rights as Indian citizen.
CO4	Students will be able to understand the importance of groups and communities in the society.
CO5	Students will be able to realize the philosophical and cultural basis and historical perspectives of human rights.

Course Contents:

UNIT 1: The Basic Concepts: **[08 Hours]**

Individual, group, civil society, state, equality, justice. Human Values, Human rights and Human Duties: - Origin, Contribution of American bill of rights, French revolution. Declaration of independence, Rights of citizen, Rights of working and exploited people.

UNIT 2 Fundamental rights and economic programme: **[07 Hours]**

Society, religion, culture, and their inter relationship. Impact of social structure on human behavior, Social Structure and Social Problems: - Social and communal conflicts and social harmony, rural poverty, unemployment, bonded labor.

UNIT 3: Migrant workers: **[07 Hours]**

Migrant workers and human rights violations, human rights of mentally and physically challenged. State, Individual liberty, Freedom and democracy. NGOs and human rights in India: - Land, Water, Forest issues.

UNIT 4: Human rights in Indian constitution and law **[07 Hours]**

i) The constitution of India: Preamble ii) Fundamental rights. iii) Directive principles of state policy. iv) Fundamental duties. v) Some other provisions.

UNIT 5: Universal declaration: **[07 Hours]**

Universal declaration of human rights and provisions of India. Constitution and law. National human rights commission and state human rights commission

Text / Reference Books

1. Shastry, T. S. N., India and Human rights: Reflections, Concept Publishing Company India (P Ltd.), 2005

2. Nirmal, C.J., Human Rights in India: Historical, Social and Political Perspectives(Law in India), Oxford India

Dr. Babasaheb Ambedkar Technological University, Lonere

(Established as a University of Technology in the State of Maharashtra)

(Under Maharashtra Act No. XXIX of 2014)

P.O. Lonere, Dist. Raigad, Pin 402 103, Maharashtra

Telephone and Fax. : 02140 - 275142

www.dbatu.ac.in

Curriculum for Second year
Undergraduate Degree Programme
B. Tech. in Chemical Engineering

With effect from AY 2021-22

	Semester III								
Course Category	**Course Code**	**Course Title**	**Teaching Scheme**			**Evaluation Scheme**			
			L	T	P	CA	MSE	ESE	Total	Credit
BSC	BTBS301	Engineering Mathematics – III	3	1	-	20	20	60	100	4
PCC	BTCHC302	Fluid Flow Operations	3	1	-	20	20	60	100	4
PCC	BTCHC303	Process Calculations	3	1	-	20	20	60	100	4
PCC	BTCHC304	Mechanical Operations	3	-	-	20	20	60	100	3
PEC	BTCHE305	Professional Elective I	3	-	-	20	20	60	100	3
LC	BTCHL306	Fluid Flow Operations + Mechanical Operations Lab	-	-	3	60	-	40	100	2
Seminar	BTCHS307	Seminar I	-	-	4	60	-	40	100	2
Internship	BTCHI308	Internship – 1 (Evaluation)	-	-	-	-	-	-	-	Audit
		Total	**15**	**3**	**7**	**220**	**100**	**380**	**700**	**22**
	Semester IV									
PCC	BTCHC401	Chemical Engineering Thermodynamics	4	1	-	20	20	60	100	5
PCC	BTCHC402	Heat Transfer Operations	3	1	-	20	20	60	100	4
HSSMC	BTHM403	Basic human rights	3	-	-	20	20	60	100	3
OEC	BTCHO404	Open Elective I	3	-	-	20	20	60	100	3
PEC	BTCHE405	Professional Elective – II	3	1	-	20	20	60	100	4
LC	BTCHL406	Heat Transfer Operations Lab	-	-	3	60	-	40	100	2
Seminar	BTCHS407	Seminar II	-	-	4	60	-	40	100	2
Internship		Field Training / Internship 2/Industrial Training (minimum of 4 weeks which can be completed partially in third semester and fourth semester or in at one time).	**-**	**-**	**-**	-	-	-	-	Credits To be evaluate d in V Sem.
		Total	**16**	**3**	**7**	**220**	**100**	**380**	**700**	**23**

**** As per the recent directives from the University, online courses on Artificial Intelligence(credit course) and Constitution of India are added in third semester as mandatory courses over and above the courses mentioned in course structure.**

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 Course

List of Electives

1) Professional Elective I
   A. Green Technology
   B. Nanotechnology
   C. Energy Technology and Conversion
   D. Renewable Energy Sources
   E. Materials for Engineering applications
2) Professional Elective II
   A. Numerical methods
   B. Introduction to Bioprocess Engineering
   C. Strength of Materials
   D. Introduction to Polymer Science and Engineering
   E. Advanced Engineering Chemistry
3) Open Elective I
   A. NSS I
   B. Development Engineering

Text / Reference:

1. Samir Sarkar, Fuels and Combustion, Universities Press, 2009.
2. Murphy W.R and Mckay G., Energy Management, Elsevier, 2007.
3. HarkerJ.H. and J.R. Backhurst, Fuel and Energy, Academic Press, London, 1981.

D. Renewable Energy Sources

Course Objectives:

After completion of the course, students will have adequate background, conceptual clarity and knowledge of appropriate solution techniques related to :

1. Challenges and problems associated with the use of energy sources.
2. Renewable energy resources and technologies
3. Conversion technologies for solar, wind, biomass and hydrogen energies
4. Performance of energy conversion technologies

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

1. Understand the challenges and problems associated with the use of energy sources.
2. List renewable energy resources and technologies
3. Design conversion technologies for solar, wind, biomass and hydrogen energies
4. Evaluate the performance of energy conversion technologies

Mapping of course outcomes with program outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	✓	✓	✓	✓	✓	-	✓	-	-	-	-	-
CO2	✓	✓	-	-	-	-	✓	-	-	-	-	-
CO3	✓	✓	✓	✓	-	-	-	-	-	-	-	-
CO4	✓	✓	✓	✓	-	-	✓	-	-	-	-	-

Detailed syllabus

Unit I: Sources of energy: Energy sources and their availability, renewable energy sources. Energy from

Unit II: Solar Energy: Sun and solar energy, solar radiation and its measurement, solar energy collectors, solar energy storage, Photovoltaic systems, Application of solar energy.

Unit III: Wind Energy: Wind as an Energy source, Basic principles of wind energy conversion, Types of Wind machines, Components of wind energy conversion system, Performance of wind machines, application of wind energy.

Unit IV: Energy from the Oceans: Introduction, Ocean Thermal Electric Conversion (OTEC), Energy from Tides, Ocean Waves

Unit V: Hydrogen energy: Introduction, Hydrogen production, Hydrogen storage, Hydrogen transportation. Chemical Energy Sources: Introduction, Fuel cells, Batteries.

Text / Reference:

1. Rai, G.D, Non-Conventional Energy Sources, Khanna Publishers, New Delhi, 2010.
2. Rajesh Kumar Prasad, T.P. Ojha, Non-Conventional Energy Sources, Jain Brothers, 2012.
3. Sukhatme S.P and J. Nayak, Solar energy – Thermal Collection and storage, 3rd Edition, Tata McGraw Hill Education Pvt Ltd., 2008.
4. MM. EI – Wakil, Power Plant Technology, Tata McGraw Hill, NewYork, 1999.

E. Materials for Engineering Applications

Course Objectives:

After completion of the course, students will have adequate background, conceptual clarity and knowledge of appropriate solution techniques related to :

1. Processing, microstructure and properties of materials.
2. Behavior of materials under various conditions.
3. Modes of failure of engineering materials and design new materials with better properties and cost effective processes.
4. Suitable materials for engineering applications.

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

1. Correlate processing, microstructure and properties of materials.
2. Understand behavior of materials under various conditions.
3. Characterize modes of failure of engineering materials and design new materials with better properties and cost effective processes.

Reboilers, vapourisers, Kettle type and Thermosiphon reboilers, forced circulation vaporizers. Heat transfer in agitated vessels both, jacketed and with coil, Determination of overall heat transfer coefficient, transient heating or cooling. Heat transfer in packed and fluidized beds. Heat transfer in extended surfaces such as fins, conduction convection heat transfer, forced convection heat transfer in circular conduits with longitudinal fins. Heat transfer in non Newtonian fluids.

Texts / References:

1. J. M. Coulson and J. F. Richardson, "Chemical Engineering", Vol. 1 ELBS, Pergamon press, 1970

2. J. M. Coulson and J. F. Richardson, "Chemical Engineering" Vol. 2 ELBS, Pergamon press, 1970

3. W. L. McCabe J. C. Smith and P. Harriot, "Unit Operations of Chemical Engineering", 4th ed. McGraw Hill 1985.

4. D. Q. Kern, "Process Heat Transfer", McGraw Hill, 1950.

BTHM403 Basic human rights

3 Credits

Category	Code	Subject Name	L	T	P	CA	MSE	ESE	Total	Credit
HSSMC	BTHM403	Basic human rights	3	-	-	20	20	60	100	3

Course Objectives:

1) To train the young minds facing the challenges of the pluralistic society and the rising conflicts and tensions in the name of particularistic loyalties to caste, religion, region and culture.
2) To give knowledge of the major "signposts" in the historical development of human rights, the range of contemporary declarations, conventions, and covenants.
3) To enable them to understand the basic concepts of human rights (including also discrimination, equality, etc.), the relationship between individual, group, and national rights.
4) To develop sympathy in their minds for those who are denied rights.
5) To make the students aware of their rights as well as duties to the nation.

Course Outcomes:

1. Students will be able to understand the history of human rights.
2. Students will learn to respect others caste, religion, region and culture.
3. Students will be aware of their rights as Indian citizen.
4. Students will be able to understand the importance of groups and communities in the society.
5. Students will be able to realize the philosophical and cultural basis and historical perspectives of human rights.

Detailed Syllabus

UNIT I:
The Basic Concepts: - Individual, group, civil society, state, equality, justice.
Human Values, Human rights and Human Duties: - Origin, Contribution of American bill of rights, French revolution. Declaration of independence, Rights of citizen, Rights of working and exploited people

UNIT II
Fundamental rights and economic programme.
Society, religion, culture, and their inter-relationship. Impact of social structure on human behavior, Social Structure and Social Problems: - Social and communal conflicts and social harmony, rural poverty, unemployment, bonded labor.

UNIT III
Migrant workers and human rights violations, human rights of mentally and physically challenged.
State, Individual liberty, Freedom and democracy.
NGOs and human rights in India: - Land, Water, Forest issues.

UNIT IV
Human rights in Indian constitution and law:-
i) The constitution of India: Preamble
ii) Fundamental rights.
iii) Directive principles of state policy.
iv) Fundamental duties.
v) Some other provisions.

UNIT V
Universal declaration of human rights and provisions of India. Constitution and law.
National human rights commission and state human rights commission.

Reference books:

Shastry, T. S. N., *India and Human rights: Reflections*, Concept Publishing Company India (P Ltd.), 2005
Nirmal, C.J., *Human Rights in India: Historical, Social and Political Perspectives(Law in India)*, Oxford India

BTCHO404 Open Elective I

3 Credits

Category	Code	Subject Name	L	T	I	CA	MSE	ESE	Total	Credit
OEC	BTCHO404	Open Elective I	3	-	-	20	20	60	100	3

A. NSS-I

Course Objectives:

After completion of the course, students will have adequate background, conceptual clarity and knowledge of appropriate solution techniques related to :

1. Features of Indian constitution, fundamental rights and duties of citizens
2. Importance of Health, Hygiene & Sanitation
3. Yoga as a tool for healthy lifestyle
4. Environmental issues and organize its management
5. Disasters and youth role in its management

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

1. Understand features of Indian constitution, fundamental rights and duties of citizens
2. Explain importance of Health, Hygiene & Sanitation
3. Summarize yoga a tool for healthy lifestyle
4. Conclude environmental issues and organize its management
5. Classify the disasters and youth role in its management

Mapping of course outcomes with program outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	
CO1										
CO2										
CO3										
CO4										
CO5										

Detailed Syllabus

Unit I: Introduction and Basic Concepts of NSS: History, Philosophy, Aims & objectives of NSS Organizational structure, Concept of regular activities, Special camping, Day Camps. Basis of adoption village/slums, Methodology of conducting Survey

Unit II: Youth and Community Mobilization: Definition, Profile of youth, Categories of youth, Issues, Challenges and opportunities for youth, Youth as an agent of social change, Youth-adult partnership, Mapping of community stakeholders, Identifying methods of mobilization, Needs & importance of volunteerism

Unit III: Importance and Role of Youth Leadership: Meaning and types of leadership, Qualities of good leaders; Traits of leadership, Importance and role of youth leadership

Unit IV: Life Competencies and Skill; Definition and importance of life competencies, Communication, Inter Personal, Problem solving and decision making, Positive thinking, Self-confidence and self-esteem, Life goals, Stress and time management

Unit V: Social Harmony and National Integration: Indian history and culture, Role of youth in peace-building and conflict resolution, Role of youth in Nation building **Youth Development Programs in India:** National Youth Policy, Youth development programs at the National Level, State Level and voluntary sector, Youth-focused and Youth-led organizations.

B. Development Engineering

Course Objectives:

After completion of the course, students will have adequate background, conceptual clarity and knowledge of appropriate solution techniques related to :

1. Importance of development
2. Different tools used in development
3. Methods and modalities of development engineering

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

1. Understand importance of development
2. Use different tools used in development
3. Understand the methods and modalities of development engineering

Dr. Babasaheb Ambedkar Technological University, Lonere

(Applicable to all the departments of UG Engineering)

New subjects being prescribed for all the students admitted to first year from A.Y. 2022 – 23.

Following subjects are made mandatory for the second year students in all the branches of engineering.

1) Universal Human Values II

2) Constitution of India

Constitution of India

Course Structure:

Course Code	Course Title	Teaching Scheme			Examination Scheme					
		L	T	P	Continuous Assessment (1)	Continuous Assessment (2)	Mid Term Test	Evaluation	Total Marks	Credits
BTHM301/ BTHM401	Indian Constitution	2	0	0	0	0	0	50	50	00

Teaching Scheme: 2 Lectures / Week

The Constitution of India:

1. Preamble
2. Fundamental Rights
3. Directive principles of state policy
4. Fundamental Duties
5. Some other provisions

Universal declaration of Human Rights and Provisions of India, Constitution and Law, National Human Rights Commission and State HumanRights Commission.

Course Objectives:

1. To familiarize the students with the key elements of the Indian constitution.
2. To enable students to grasp the constitutional provisions and values.
3. To acquaint the students with the powers and functions of various constitutional offices and Institutions.
4. To make students understand the basic premises of Indian politics and role of constitution and citizen oriented measures in a democracy.

Course Outcomes:

At the end of the course the students will

CO1: Understand the key aspects of the Indian Constitution.

CO2: Comprehend the structure and philosophy of the Constitution

CO3: Understand the power and functions of various constitutional offices and institutions.

CO4: Realise the significance of the constitution and appreciate the role of constitution and citizen oriented measures in a democracy.

Module.1 Introduction (5 Lectures)

Constitution' meaning of the term, Indian Constitution: Sources and constitutional history, Features: Citizenship, Preamble, Fundamental Rights and Duties, Directive, Principles of State Policy

Module.2 Union Government and its Administration (5 Lectures)

Structure of the Indian Union: Federalism, Centre- State, relationship, President: Role, power and position, PM and Council of ministers, Cabinet and Central Secretariat, Lok Sabha, Rajya Sabha

Module.3 State Government and its Administration (4 Lectures)

Governor: Role and Position, CM and Council of ministers, State Secretariat: Organisation, Structure and Functions

Module.4 Local Administration (5 Lectures)

District's Administration head: Role and Importance, Municipalities: Introduction, Mayor and role of Elected Representative, CEO of Municipal Corporation, Pachayati Raj: Introduction, PRI: Zila Pachayat, Elected officials and their roles, CEO Zila Pachayat: Position and role, Block level: Organizational Hierarchy (Different departments), Village level: Role of Elected and Appointed officials, Importance of grass root democracy

Module.5 Election Commission (5 Lectures)

Election Commission: Role and Functioning, Chief Election Commissioner and Election Commissioners, State Election Commission: Role and Functioning, Institute and Bodies for the welfare of SC/ST/OBC and women

TEXT/REFERENCE BOOKS:

1. Sastry, T. S. N., (2005). India and Human rights: Reflections, Concept Publishing Company India (P Ltd.),
2. Nirmal, C.J., (1999). Human Rights in India: Historical, Social and Political Perspectives (Law in India), Oxford India.

UNIVERSAL HUMAN VALUES - II

Course Code	Course Title	Teaching Scheme			Examination Scheme				
		L	T	P	CA-1	CA-2	Mid Term Test	End Sem Exam	Total Marks
BTHM302/ BTHM402	Universal Human Values - II	3	1	0	10	10	20	60	100

Course Objectives:

1. To help the students appreciate the essential complementarily between 'VALUES' and 'SKILLS' to ensure sustained happiness and prosperity which are the core aspirations of all human beings

2. To facilitate the development of a Holistic perspective among students towards life and profession as well as towards happiness and prosperity based on a correct understanding of the Human reality and the rest of existence. Such a holistic perspective forms the basis of Universal Human Values and movement towards value-based living in a natural way

3. To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct, trustful and mutually fulfilling human behavior and mutually enriching interaction with Nature.

Course Outcomes:

CO1: To become more aware of themselves, and their surroundings (family, society, nature)

CO2: They would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind.

CO3: They would also become sensitive to their commitment towards what they have understood (human values, human relationship and human society).

CO4: They would be able to apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.

Syllabus:

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 Fulfilment 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

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

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 - PanditSunderlal

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)

Dr. Babasaheb Ambedkar Technological University, Lonere

(Established as a University of Technology in the State of Maharashtra)

(Under Maharashtra Act No. XXIX of 2014)

P.O. Lonere, Dist. Raigad, Pin 402 103, Maharashtra

Telephone and Fax. : 02140 - 275142

www.dbatu.ac.in

Curriculum for Third Year Undergraduate Degree Programme B. Tech. in Chemical Engineering

With effect from AY 2022-23

	Semester V									
Course Category	**Course Code**	**Course Title**	**Teaching Scheme**			**Evaluation Scheme**				
			L	T	P	CA	MSE	ESE	Total	Credit
PCC	BTCHC501	Mass Transfer Operations - I	3	1	-	20	20	60	100	4
PCC	BTCHC502	Chemical Reaction Engineering - I	3	1	-	20	20	60	100	4
PCC	BTCHC503	Chemical Technology	3	-	-	20	20	60	100	3
OEC	BTCHO504	Open Elective - II	3	-	-	20	20	60	100	3
PEC	BTCHE505	Professional Elective – III	3	-	-	20	20	60	100	3
LC	BTCHL506	Chemical Reaction Engineering Lab	-	-	3	60	-	40	100	2
Project	BTCHM507	Mini Project - 1	-	-	4	60	-	40	100	2
Internship	BTCHI508	Internship – 2 (Evaluation)	-	-	-	-	-	-	-	Audit
		Total	**15**	**2**	**7**	**220**	**100**	**380**	**700**	**21**
	Semester VI									
PCC	BTCHC601	Chemical Reaction Engineering - II	3	1	-	20	20	60	100	4
PCC	BTCHC602	Mass Transfer Operations - II	3	1	-	20	20	60	100	4
PCC	BTCHC603	Process Instrumentation and Control	4	1	-	20	20	60	100	5
HSSMC	BTHM604	Engineering Economics and Project management	4	-	-	20	20	60	100	4
OEC	BTCHO605	Open Elective - III	3	-	-	20	20	60	100	3
LC	BTCHL606	Mass Transfer Operations Lab	-	-	3	60	-	40	100	2
Project	BTCHM607	Mini Project - 2	-	-	4	60	-	40	100	2
Internship		Field Training / Internship3/Industrial Training (minimum of 4 weeks which can be completed partially in fifth semester and sixth semester or in at one time).	**-**	**-**	**-**	-	-	-	-	Credits To be evalua-ted in VII Sem.
		Total	**17**	**3**	**7**	**220**	**100**	**380**	**700**	**24**

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 Course

List of Electives

1) Professional Elective III
   A. Industrial Safety and Hazard Mitigation
   B. Optimization Techniques
   C. Petroleum refining and Petrochemicals
   D. Food technology
   E. Disaster Management in Chemical Industries
2) Open Elective II
   A. NSS II
   B. Pollution Control in Process Industries
3) Open Elective III
   A. Pharmaceuticals and fine Chemicals
   B. Heat Transfer Equipment Design

Youth and Yoga: History, Philosophy and concept of Yoga , Myths and misconceptions about yoga , Different Yoga traditions and their Impacts, Yoga as a preventive, promotive and curative method, Yoga as a tool for healthy lifestyle.

Unit IV:

Environment Issues: Environment conservation, Enrichment and Sustainability, Climate change, Waste management, Natural resource management, Rain water harvesting, Energy conservation, Waste land development, Soil conservations and forestation.

Unit V:

Disaster Management: Introduction to Disaster Management, Classification disaster, Role of youth in Disaster Management.Youth and crime:Sociological and psychological factors influencing youth crime, Peer mentoring in preventing crime, Awareness about anti-ragging, Cybercrime and its prevention, Juvenile justice.

B. Pollution Control in Process Industries

Course Objectives:

After completion of the course, students will have adequate background, conceptual clarity and knowledge of appropriate solution techniques related to :

1. Biosphere, hydrological cycle and air pollutants
2. Meteorological aspects of air pollutant dispersion
3. Air pollution control equipments
4. Control of sulphur oxides, nitrogen oxides etc.
5. Waste water sampling, analysis and treatment

Course Outcomes: At the end of the course, the student willbe able to:

1. Analyze the effects of pollutants on the environment
2. Understand meteorological aspects of air pollution
3. Understand air pollution control methods
4. Select treatment technologies for water/wastewater/solid waste
5. Design unit operations for pollution control

Mapping of course outcomes with program outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	✓	✓	-	-	-	-	✓	-	-	-	-	-

CO2	✓	✓	-	-	-	-	✓	-	-	-	-	-
CO3	✓	✓	-	-	-	-	✓	-	-	-	-	-
CO4	✓	✓	-	✓	✓	-	✓	-	-	-	-	-
CO5	✓	✓	✓	✓	-	-	✓	-	-	-	-	-

Detailed Syllabus

Unit I:

Introduction: Biosphere, Hydrological cycle, Nutrient cycle, Consequences of population growth, Pollution of air, Water and soil. Air pollution sources & effects: Classification and properties of air pollutants, Emission sources, Behavior and fate of air pollutants, Effect of air pollution.

Unit II:

Meteorological aspects of air pollutant dispersion: Temperature lapse rates and stability, Wind velocity and turbulence, Plume behavior, Dispersion of air pollutants, Estimation of plume rise. Air pollution sampling and measurement: Types of pollutant sampling and measurement, Ambient air sampling, Stack sampling, Analysis of air pollutants.

Unit III:

Air pollution control methods & equipment: Control methods, Source correction methods, Cleaning of gaseous effluents, Particulate emission control, Selection of a particulate collector, Control of gaseous emissions, Design methods for control equipment.

Unit IV:

Control of specific gaseous pollutants: Control of sulphur dioxide emissions, Control of nitrogen oxides, Carbon monoxide control, Control of hydrocarbons and mobile sources. Water pollution: Water resources, Origin of wastewater, types of water pollutants and there effects.

Unit V:

Waste water sampling, analysis and treatment: Sampling, Methods of analysis, Determination of organic matter, Determination of inorganic substances, Physical characteristics, Bacteriological measurement, Basic processes of water treatment, Primary treatment, Secondary treatment, Advanced wastewater treatment, Recovery of materials from process effluents.Solid waste management: Sources and classification, Public health aspects, Methods of collection, Disposal Methods, Potential methods of disposal. Hazardous waste management: Definition and sources, Hazardous waste classification, Treatment methods, Disposal methods.

Text / References:

1. Rao C.S., Environmental Pollution Control Engineering, Wiley Eastern Limited, India, 1993.
2. Noel de Nevers, Air Pollution and Control Engineering, McGraw Hill, 2000.
3. Glynn Henry J. and Gary W. Heinke, Environmental Science and Engineering, 2nd Edition, Prentice Hall of India, 2004.
4. Rao M.N. and Rao H.V.N - Air Pollution, Tata – McGraw Hill Publishing Ltd., 1993.
5. De A.K - Environmental Chemistry, Tata – McGraw Hill Publishing Ltd., 1999.

BTCHE505 Professional Elective – III 3 Credits

Category	Code	Subject Name	L	T	P	CA	MSE	ESE	Total	Credit
PEC	BTCHE 505	Professional Elective – III	3	-	-	20	20	60	100	3

A. Industrial Safety and Hazard Mitigation

Course Objectives:

After completion of the course, students will have adequate background, conceptual clarity and knowledge of appropriate solution techniques related to:

1. Safety programs, engineering ethics and public perceptions
2. Fire and explosions with flammability characteristics
3. Prevention of fire and explosion
4. Operated reliefs in liquids, vapors, gases
5. Hazard identification, safety procedures and designs

Course Outcomes:

At the end of the course, the student will be able to:

1. Know Safety programs, engineering ethics and public perceptions
2. Understand the principles of fire and explosions , flammability characteristics
3. Know about the methods for prevention of fire and explosion
4. Know about Operated reliefs in liquids, vapors , gases
5. Know about process hazard checklist, how to do hazard surveys
6. Know safety procedures and best safety practices

Mapping of course outcomes with program outcomes

Dr. Babasaheb Ambedkar Technological University, Lonere

(Applicable to all the departments of UG Engineering)

New subjects being prescribed for all the students admitted to first year from A.Y. 2022 – 23.

Following subjects are made mandatory for the second year students in all the branches of engineering.

1) **Universal Human Values II**
2) **Constitution of India**

Constitution of India

Course Structure:

Course Code	Course Title	Teaching Scheme			Examination Scheme					
		L	T	P	Continuous Assessment (1)	Continuous Assessment (2)	Mid Term Test	Evaluation	Total Marks	Credits
BTHM301/ BTHM401	Indian Constitution	2	0	0	0	0	0	50	50	00

Teaching Scheme: 2 Lectures / Week

The Constitution of India:
1. Preamble
2. Fundamental Rights
3. Directive principles of state policy
4. Fundamental Duties
5. Some other provisions

Universal declaration of Human Rights and Provisions of India, Constitution and Law, National Human Rights Commission and State HumanRights Commission.

Course Objectives:
1. To familiarize the students with the key elements of the Indian constitution.
2. To enable students to grasp the constitutional provisions and values.
3. To acquaint the students with the powers and functions of various constitutional offices and Institutions.
4. To make students understand the basic premises of Indian politics and role of constitution and citizen oriented measures in a democracy.

Course Outcomes:

At the end of the course the students will

CO1: Understand the key aspects of the Indian Constitution.

CO2: Comprehend the structure and philosophy of the Constitution

CO3: Understand the power and functions of various constitutional offices and institutions.

CO4: Realise the significance of the constitution and appreciate the role of constitution and citizen oriented measures in a democracy.

Module.1 Introduction (5 Lectures)

Constitution' meaning of the term, Indian Constitution: Sources and constitutional history, Features: Citizenship, Preamble, Fundamental Rights and Duties, Directive, Principles of State Policy

Module.2 Union Government and its Administration (5 Lectures)

Structure of the Indian Union: Federalism, Centre- State, relationship, President: Role, power and position, PM and Council of ministers, Cabinet and Central Secretariat, Lok Sabha, Rajya Sabha

Module.3 State Government and its Administration (4 Lectures)

Governor: Role and Position, CM and Council of ministers, State Secretariat: Organisation, Structure and Functions

Module.4 Local Administration (5 Lectures)

District's Administration head: Role and Importance, Municipalities: Introduction, Mayor and role of Elected Representative, CEO of Municipal Corporation, Pachayati Raj: Introduction, PRI: Zila Pachayat, Elected officials and their roles, CEO Zila Pachayat: Position and role, Block level: Organizational Hierarchy (Different departments), Village level: Role of Elected and Appointed officials, Importance of grass root democracy

Module.5 Election Commission (5 Lectures)

Election Commission: Role and Functioning, Chief Election Commissioner and Election Commissioners, State Election Commission: Role and Functioning, Institute and Bodies for the welfare of SC/ST/OBC and women

TEXT/REFERENCE BOOKS:

1. Sastry, T. S. N., (2005). India and Human rights: Reflections, Concept Publishing Company India (P Ltd.),
2. Nirmal, C.J., (1999). Human Rights in India: Historical, Social and Political Perspectives (Law in India), Oxford India.

UNIVERSAL HUMAN VALUES - II

Course Code	Course Title	Teaching Scheme			Examination Scheme				
		L	T	P	CA-1	CA-2	Mid Term Test	End Sem Exam	Total Marks
BTHM302/ BTHM402	Universal Human Values - II	3	1	0	10	10	20	60	100

Course Objectives:

1. To help the students appreciate the essential complementarily between 'VALUES' and 'SKILLS' to ensure sustained happiness and prosperity which are the core aspirations of all human beings

2. To facilitate the development of a Holistic perspective among students towards life and profession as well as towards happiness and prosperity based on a correct understanding of the Human reality and the rest of existence. Such a holistic perspective forms the basis of Universal Human Values and movement towards value-based living in a natural way

3. To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct, trustful and mutually fulfilling human behavior and mutually enriching interaction with Nature.

Course Outcomes:

CO1: To become more aware of themselves, and their surroundings (family, society, nature)

CO2: They would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind.

CO3: They would also become sensitive to their commitment towards what they have understood (human values, human relationship and human society).

CO4: They would be able to apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.

Syllabus:

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 Fulfilment 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

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

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 - PanditSunderlal

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)

Teaching & Evaluation Scheme for Third Year B Tech Civil Engg.

Semester- V										
Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
PCC 10	BTCVC501	Design of Steel Structures	2	1	-	20	20	60	100	3
PCC 11	BTCVC502	Geotechnical Engineering	3	1	-	20	20	60	100	4
PCC 12	BTCVC503	Structural Mechanics –II	2	1	-	20	20	60	100	3
PCC 13	BTCVC504	Concrete Technology	2	-	-	20	20	60	100	2
HSSMC3	BTHM505	Project Management	3	-	-	20	20	60	100	3
PEC 1	BTCVPE506	A. Advanced Environmental Engg. B. Applied Geology C. Hydraulic Engineering Design D. Advanced Water Resources E. Geomatics F. Town and Urban Planning G. Material, Testing and Evaluation H. Construction Economics & Finance	3	-	-	20	20	60	100	3
ESC10	BTCVES507	Software applications in Civil Engineering	2	-	-	50	-	-	50	Audit
LC 7	BTCVL508	SDD of Steel Structures Lab.	-	-	2	20	-	30	50	1
LC 8	BTCVL509	Geotechnical Engineering Lab.	-	-	2	20	-	30	50	1
LC 9	BTCVL510	Concrete Technology Lab.	-	-	2	20	-	30	50	1
Internship	BTCVP410	Internship – 2 Evaluation	-	-	-	-	-	-	-	Audit
		Total	**17**	**3**	**6**	**230**	**120**	**450**	**800**	**21**

Semester- VI										
Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
PCC 14	BTCVC601	Design of RC Structures	3	1	-	20	20	60	100	4
PCC 15	BTCVC602	Foundation Engineering	3	1	-	20	20	60	100	4
PCC 16	BTCVC603	Transportation Engineering	3	-	-	20	20	60	100	3
PEC 2	BTCVPE604	A. Industrial Waste Treatment B. Managerial Techniques C. Open Channel Flow D. Water Power Engineering E. Ground Improvement Techniques F. Structural Audit G. Intelligent Transportation Systems H. Plastic Analysis of Structures I. Numerical Methods in Civil Engg. J. Engineering Management	3	-	-	20	20	60	100	3
OEC 1	BTCVOE605	A. Environmental Impact Assessment B. Basic Human Rights C. Business Communication and Presentation Skills D. Composite Materials E. Experimental Stress Analysis F. Python Programming G. Operation Research H. Applications of Remote Sensing and Geographic Information Systems I. Civionics: Instrumentation & Sensor Technologies for Civil Engineering J. Planning for Sustainable Development K. Development Engineering	3	-	-	20	20	60	100	3
HSSMC4	BTHM606	Indian Constitution	2	-	-	50	-	-	50	Audit
LC 10	BTCVL607	SDD of RC Structures Lab.	-	-	2	20	-	30	50	1
LC 11	BTCVL608	Transportation Engineering Lab	-	-	2	20	-	30	50	1
Project	BTCVM609	Mini Project	-	-	2	20	-	30	50	1
Internship		**Mandatory (BTCVP610)** Field Training/ Internship/Industrial Training (minimum of 4 weeks training in Summer Vacation after Semester VI and appear at examination in Semester VII.)	-	-	-	-	-	-	-	Credits to be evaluated in VII Sem
Total			**17**	**2**	**6**	**210**	**100**	**390**	**700**	**20**

Teaching & Evaluation Scheme for Second Year B. Tech. Civil Engg.

Semester- III										
Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
BSC 5	BTBS301	Mathematics – III	3	1	-	20	20	60	100	4
ESC 8	BTCVES302	Mechanics of Solids	3	1	-	20	20	60	100	4
PCC 1	BTCVC303	Building Construction & Drawing	2	1	-	20	20	60	100	3
PCC 2	BTCVC304	Hydraulics -I	3	1	-	20	20	60	100	4
PCC 3	BTCVC305	Surveying	2	1	-	20	20	60	100	3
HSSMC2	BTHM306	Soft Skill Development	2	-	-	50	-	-	50	Audit
LC 1	BTCVL 307	Solid Mechanics Laboratory	-	-	2	20	-	30	50	1
LC 2	BTCVL 308	Hydraulics-I Laboratory	-	-	2	20	-	30	50	1
LC 3	BTCVL 309	Surveying Laboratory	-	-	2	20	-	30	50	1
Internship	BTES210P	Internship –I Evaluation (From Sem II)	-	-	-	-	-	50	50	Audit
		Total	**15**	**05**	**06**	**210**	**100**	**440**	**750**	**21**

Semester- IV										
Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
PCC 4	BTCVC401	Building Planning and Drawing	2	-	-	20	20	60	100	2
PCC 5	BTCVC402	Environmental Engineering	2	-	-	20	20	60	100	2
PCC 6	BTCVC403	Structural Mechanics - I	2	1	-	20	20	60	100	3
PCC 7	BTCVC404	Water Resources Engineering	3	-	-	20	20	60	100	3
PCC 8	BTCVC405	Hydraulics - II	2	1	-	20	20	60	100	3
PCC 9	BTCVC406	Engineering Geology	2	1	-	20	20	60	100	3
LC 4	BTCVL407	Building Planning and CAD Lab.	-	-	2	20	-	30	50	1
LC 5	BTCVL408	Environmental Engg. Lab.	-	-	2	20	-	30	50	1
LC 6	BTCVL409	HE-II Lab.	-	-	2	20	-	30	50	1
Internship	BTCVP410	Field Training / Internship/Industrial Training (minimum of 4 weeks training in Summer Vacation after Semester IV and appear at examination in Semester V)	-	-	-	-	-	-	-	To be evaluated in V Sem.
		Total	**13**	**03**	**06**	**180**	**120**	**450**	**750**	**19**

Dr. Babasaheb Ambedkar Technological University
(Established as a University of Technology in the State of Maharashtra)
(under Maharashtra Act No. XXIX of 2014)
P.O. Lonere, Dist. Raigad, Pin 402 103, Maharashtra
Telephone and Fax. 02140 - 275142
www.dbatu.ac.in

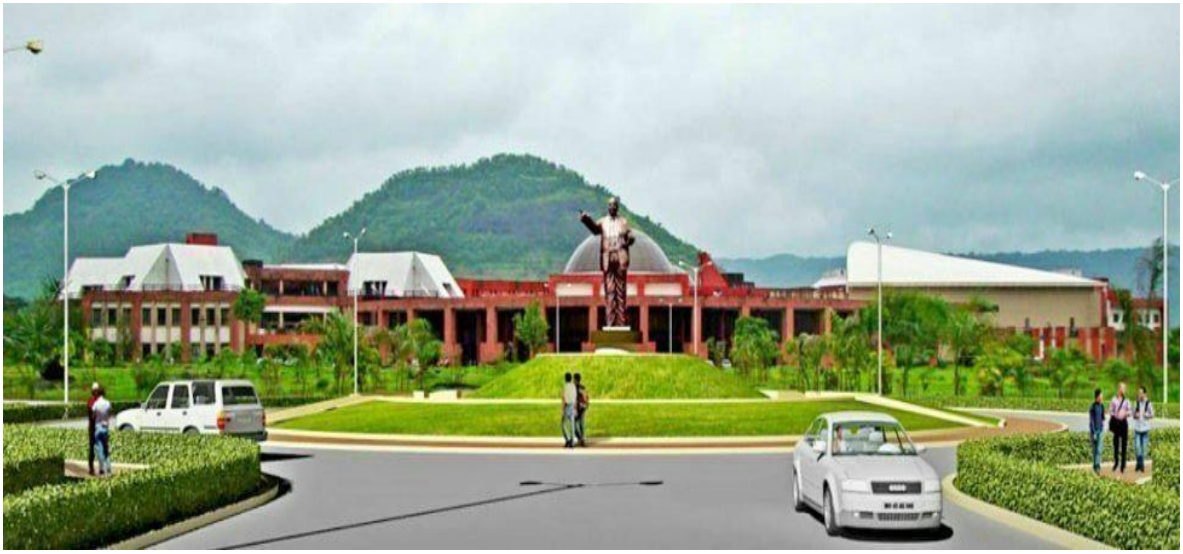
PROPOSED CURRICULUM

UNDER GRADUATE PROGRAMME

B.TECH

COMPUTER ENGINEERING

WITH EFFECT FROM THE ACADEMIC YEAR 2020-2021



Semester –III (Second Year)

Proposed Scheme w.e.f. July – 2021

Course Category	Course Code	Course Title	Weakly Teaching Hrs			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
	BTBS301	Engineering Mathematics – III	3	1	-	20	20	60	100	4
	BTCOC302	Discrete Mathematics	3	1	-	20	20	60	100	4
	BTCOC303	Data Structures	3	1	-	20	20	60	100	4
	BTCOC304	Computer Architecture & Organization	3	1	-	20	20	60	100	4
	BTCOC305	Elective –I (a) Object - oriented Programming in C++ (b) Object Oriented Programming in Java	3	1	-	20	20	60	100	4
	BTCOL306	Data Structures Lab & Object Oriented Programming Lab	-	-	4	60	-	40	100	2
	BTCOS307	Seminar – I	-		4	60	-	40	100	2
	BTES211P	Field Training / Internship / Industrial Training Evaluation	-	-	-	-	-	-	-	Audit
		TOTAL	**15**	**5**	**8**	**220**	**100**	**380**	**700**	**24**

Semester –IV (Second Year)

Proposed Scheme w.e.f. January – 2022

Course Category	Course Code	Course Title	Weakly Teaching Hrs			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
	BTCOC401	Design & Analysis of Algorithms	3	1	-	20	20	60	100	4
	BTCOC402	Operating Systems	3	1	-	20	20	60	100	4
	BTHM403	Basic Human Rights	3	-	-	20	20	60	100	3
	BTBS404	Probability Theory and Random Processes	3	-	-	20	20	60	100	3
	BTES405	Digital Logic Design & Microprocessors	3	1	-	20	20	60	100	4
	BTCOL406	Operating Systems & Python Programming Lab	1*	-	4	60	-	40	100	3
	BTCOS407	Seminar – II			4	60	-	40	100	2
	BTCOF408	Field Training / Internship / Industrial Training Evaluation						-	-	Audit to be evaluated in V Sem.
TOTAL			**16**	**3**	**8**	**220**	**100**	**380**	**700**	**23**

*Note: Lecture should be conducted only for Python Programming

Semester –V (Third Year)
Proposed Scheme w.e.f. July – 2022

Course Category	Course Code	Course Title	Weakly Teaching Hrs			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
	BTCOC501	Database Systems	3	1	-	20	20	20	100	4
	BTCOC502	Theory of Computation	3	1	-	20	20	20	100	4
	BTCOC503	Software Engineering	3	1	-	20	20	20	100	4
	BTCOE504	Elective – II (A) Human computer Interaction (B) Numerical Methods	3	-	-	20	20	20	100	3
	BTHM505	Elective – III (A) Economics and Management (B) Business Communication	3	-	-	20	20	20	100	3
	BTCOL506	Database Systems & Software Engineering Lab	-	-	4	60	-	40	100	2
	BTCOM507	Mini-project – I	-	-	4	60	-	40	100	2
	BTCOF408	Field Training / Internship / Industrial Training Evaluation	-	-	-	-	-	-	-	Audit
TOTAL			**15**	**3**	**8**	**220**	**100**	**380**	**700**	**22**

Semester –VI (Third Year)
Proposed Scheme w.e.f. January – 2023

Course Category	Course Code	Course Title	Weakly Teaching Hrs			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
	BTCOC601	Compiler Design	3	1	-	20	20	60	100	4
	BTCOC602	Computer Networks	3	1	-	20	20	60	100	4
	BTCOC603	Machine Learning	3	1	-	20	20	60	100	4
	BTCOE604	Elective – IV (A) Geographic Information System (B) Internet of Things (C) Embedded Systems	3	-	-	20	20	60	100	3
	BTHM605	Elective – V (A) Development Engineering (B) Employability and Skill Development (C) Consumer Behaviour	3	-	-	20	20	60	100	3
	BTCOL606	Competitive Programming & Machine Learning Lab	1*	-	4	60	-	40	100	3
	BTCOM607	Mini-project – II	-	-	4	60	-	40	100	2
	BTCOF608	Field Training / Internship / Industrial Training	-	-	-	-	-	-	-	Audit to be Evaluated in VII Sem.
TOTAL			**16**	**3**	**8**	**220**	**100**	**380**	**700**	**23**

*Note: Lecture should be conducted only for Competitive Programming

Semester –VII (Final Year)
Proposed Scheme w.e.f. July – 2023

Course Category	Course Code	Course Title	Weakly Teaching Hrs			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
	BTCOC701	Artificial Intelligence	3	-	-	20	20	60	100	3
	BTCOC702	Cloud Computing	3	-	-	20	20	60	100	3
	BTCOE703	Elective – VI (A) Bioinformatics (B) Distributed System (C) Big Data Analytics	3	-	-	20	20	60	100	3
	BTCOE704	Open Elective – VII (A) Cryptography and Network Security (B) Business Intelligence (C) Block chain Technology	3	-	-	20	20	60	100	3
	BTCOE705	Open Elective – VIII (A) Virtual Reality (B) Deep Learning (C) Design Thinking	3	-	-	20	20	60	100	3
	BTHM706	Foreign Language Studies	-	-	4	-	-	-	-	Audit
	BTCOL707	Artificial Intelligence & Cloud Computing Lab	-	-	4	60	-	40	100	2
	BTCOS708	Project Phase – I	-	-	-	60	-	40	100	2
	BTCOF608	Field Training / Internship / Industrial Training	-	-	-	-	-	-	-	Audit
TOTAL			**15**	**-**	**8**	**220**	**100**	**380**	**700**	**19**

Semester –VIII (Final Year)
Proposed Scheme w.e.f. January – 2024

Course Category	Course Code	Course Title	Weakly Teaching Hrs			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
	BTCOF801	Project phase – II (In-house) / Internship and Project in Industry	-	-	24	60	-	40	100	12
TOTAL			**-**	**-**	**24**	**60**	**-**	**40**	**100**	**12**

BTHM403: Basic Human Rights

[Unit 1] **[6 Hours]**

The Basic Concepts: - Individual, group, civil society, state, equality, justice, Human Values, Human rights and Human Duties: - Origin, Contribution of American bill of rights, French revolution, Declaration of independence, Rights of citizen, Rights of working and exploited people.

[Unit 2] **[6 Hours]**

Fundamental rights and economic programme, Society, religion, culture, and their inter relationship, Impact of social structure on human behavior, Social Structure and Social Problems: - Social and communal conflicts and social harmony, rural poverty, unemployment, bonded labor.

[Unit 3] **[6 Hours]**

Migrant workers and human rights violations, human rights of mentally and physically challenged, State, Individual liberty, Freedom and democracy, NGOs and human rights in India: - Land, Water, Forest issues.

[Unit 4] **[6 Hours]**

Human rights in Indian constitution and law:- i) The constitution of India: Preamble ii) Fundamental rights iii) Directive principles of state policy vi)Fundamental duties v) Some other provisions.

[Unit 5] **[6 Hours]**

Universal declaration of human rights and provisions of India, Constitution and law, National human rights commission and state human rights commission.

Text Book:

1. Shastry, T. S. N., India and Human rights: Reflections, Concept Publishing Company India (P Ltd.), 2005.

Reference books:

1. Nirmal, C.J., Human Rights in India: Historical, Social and Political Perspectives (Law in India), Oxford India

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY,

B. Tech in Electronics & Telecommunication Engineering
Curriculum for Second Year

Semester III

rse egory	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
	BTBS301	Engineering Mathematics – III	3	1	-	20	20	60	100	4
C 1	BTETC302	Electronic Devices & Circuits	3	1	-	20	20	60	100	4
C 2	BTETC303	Digital Electronics	3	1	-	20	20	60	100	4
C	BTES304	Electrical Machines and Instruments	3	1	-	20	20	60	100	4
	BTETL305	Electronic Devices & Circuits Lab	-	-	2	60	-	40	100	1
	BTETL306	Digital Electronics Lab	-	-	2	60	-	40	100	1
minar	BTETS307	Seminar I	-	-	4	60	-	40	100	2
ternship	BTES211P	Internship – 1 Evaluation	-	-	-	-	-	-	-	Audit
		Total	**12**	**4**	**8**	**260**	**80**	**360**	**700**	**20**

Semester IV

ourse ategory	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
CC 3	BTETC401	Network Theory	3	1	-	20	20	60	100	4
CC 4	BTETC402	Signals and Systems	3	1	-	20	20	60	100	4
HSSMC	BTHM403	Basic Human Rights	3	-	-	20	20	60	100	3
BSC	BTBS404	[redacted] Processes	3	-	-	20	20	60	100	3
PEC 1	BTETPE405	(A) Numerical Methods and Computer Programming (B) Data Compression & Encryption (C) Computer Organization and Architecture (D) Introduction to MEMS (E) Python Programming	3	1	-	20	20	60	100	4
LC	BTETL406	Network Theory Lab & Signals and Systems Lab	-	-	4	60	-	40	100	2
Seminar	BTETS407	Seminar II	-	-	4	60	-	40	100	2
Internship	BTETP408 (Internship – 2)	Field Training /Internship/Industrial Training (minimum of 4 weeks which can be completed partially in third semester and fourth semester or in at onetime).	-	-	-	-	-	-	-	Audit (evaluation will be in V Sem.)
		Total	**15**	**3**	**8**	**220**	**100**	**380**	**700**	**22**

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.

Dr. Babasaheb Ambedkar Technological University, Lonere.

Dr. Babasaheb Ambedkar Technological University (Established as a University of Technology in the State of Maharashtra) (under Maharashtra Act No. XXIX of 2014)

P.O. Lonere, Dist. Raigad, Pin 402103, Maharashtra

Telephone and Fax. 02140 – 275142 www.dbatu.ac.in

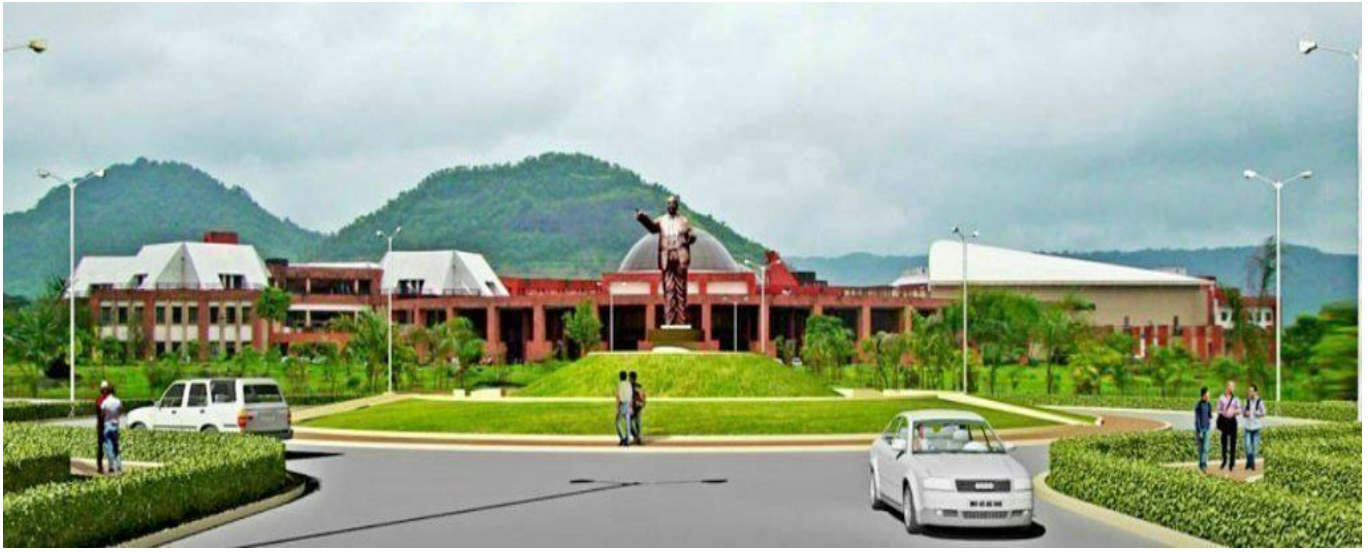
COURSE STRUCTURE AND SYLLABUS

For

Final Year

B. Tech. Electronics Engineering Programme

for the Academic Year 2021-22



B. Tech (Electronics Engineering)

Proposed Curriculum for Semester VII [Final Year]

S.N.	Course Code	Type of Course	Course Title	Hours Per Week			Evaluation Scheme			Total Marks	Credits
				L	T	P	MSE	CA	ESE		
1	BTEXC701	Professional Core Course 1	Antennas and Wave Propagation	3	0	0	20	20	60	100	3
2	BTEXPE702	Program Elective 3	Group A	3	0	0	20	20	60	100	3
3	BTEXPE703	Program Elective 4	Group B	3	0	0	20	20	60	100	3
4	BTEXPE704	Program Elective 5	Group C	3	0	0	20	20	60	100	3
5	BTHM705	Humanities & Social Science including Management Courses	Financial management	2	0	0	--	50	--	50	2
6	BTEXL706	Program Elective 3 Lab		0	0	2	--	30	20	50	1
7	BTEXL707	Program Elective 4 Lab		0	0	2	--	30	20	50	1
8	BTEXL708	Program Elective 5 Lab		0	0	2	--	30	20	50	1
9	BTEXP709	Project Part-I		0	0	8	--	50	50	100	4
10	BTEXS710	Seminar		0	0	2	--	30	20	50	1
11	BTEXF612	Field Training/ Internship/Industrial Training Evaluation		--	--	--	--	--	50	50	1
			Total	**14**	**0**	**16**	**80**	**300**	**420**	**800**	**23**

Program Elective 3 (Group A)	Program Elective 4 (Group B)	Program Elective 5 (Group C)
(A) Digital Image Processing	(A) IOT 4.0	(A) Microwave Theory & Techniques
(B) Data Compression and Encryption /Cryptography	(B) Wireless Sensor Networks	(B) Satellite Communication
(C) NSQF (Level 7 Course)	(C) CMOS Design	(C) Fiber Optic Communication
(D) Parallel Processing	(D) Process Instrumentation	(D) Wireless Communication

B. Tech (Electronics Engineering)

Course Structure for Semester VIII [Fourth Year]

Course Code	Type of Course	Course Title	Weekly Teaching Scheme			Evaluation Scheme				Credits
			L	T	P	MSE	CA	ESE	Total	
• Introduction to Internet of Things • Computer Vision and Image Processing • Biomedical Signal Processing • Industrial Automation and Control • Cryptography and Network Security • Digital IC Design # Student to opt any two subjects from above list			3	-	--	20*	20*	60*	100	3
			3	-	--	20*	20*	60*	100	3
BTMEP803	Project Part-II or Internship*		--	--	30	--	--	100	150	15
		Total	--	--				220	350	21

** Six months of Internship in the industry*

**Students doing project at institute will have to appear for CA/MSE/ESE*

** Student doing project at Industry will give NPTEL examination / Examination conducted by university i.e. CA/MSE/ESE*

 # These subjects are to be studied on self –study mode using SWAYAM/NPTEL/Any other source

 # Teacher who work as a facilitator for the course should be allotted 3 hrs/week load.

 # Project Load: 2hrs/week/project.

Mapping of Courses with MOOCs Platform SWYAM / NPTEL

No	Course Name	Duration (Weeks)	Institute Offering Course	Name of Professor
1	Introduction to internet of things	12	IIT Kharagpur	Prof. Sudip Misra
2	Computer Vision and Image Processing	12	IIT Gandhinagar	Prof. M. K. Bhuyan
3	Biomedical Signal Processing	12	IIT Kharagpur	Prof. Sudipta Mukhopadhyay
4	Industrial Automation and Control	12	IIT Kharagpur	Prof. Siddhartha Mukhopadhyay
5	Cryptography & Network Security	12	IIT Kharagpur	Prof. Sourav Mukhopadhyay
6	Digital IC Design	12	IIT Madras	Prof. Janakiraman

Dr. Babasaheb Ambedkar Technological University, Lonere.

B. Tech in (Electronics Engineering)

Curriculum for Third Year

Semester V

Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
PCC 5	BTEXC501	Analog Circuits	2	2	-	20	20	60	100	4
PCC 6	BTEXC502	Digital Signal Processing	3	1	-	20	20	60	100	4
PCC 7	BTEXC503	Microelectronics	3	1	-	20	20	60	100	4
PEC 2	BTEXPE504	Group A	3	1	-	20	20	60	100	4
OEC 1	BTEXOE505	Group B	3	1	-	20	20	60	100	4
LC	BTEXL507	Analog Circuits Lab & Digital Signal Processing Lab	-	-	4	60	-	40	100	2
Project	BTEXM508	Mini Project – 1	-	-	4	60	-	40	100	2
Internship	BTEXP408	Internship – 2 Evaluation	-	-	-	-	-	50	50	Audit
		Total	**14**	**6**	**8**	**220**	**100**	**430**	**750**	**24**

Semester VI

Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
PCC 8	BTEXC601	Power Electronics	3	1	-	20	20	60	100	4
PCC 9	BTEXC602	Microprocessors and Microcontrollers	3	1	-	20	20	60	100	4
PEC 3	BTEXPE603	Group A	3	1	-	20	20	60	100	4
OEC 2	BTEXOE604	Group B	3	1	-	20	20	60	100	4
HSSMC	BTHM605	Employability & Skill Development	3	-	-	20	20	60	100	3
LC	BTEXL606	Power Electronics Lab & Microprocessors and Microcontrollers Lab	-	-	4	60	-	40	100	2
Project	BTEXM607	Mini Project – 2	-	-	4	60	-	40	100	2
Internship	BTEXP608 (Internship – 3)	Field Training / Internship/Industrial Training (minimum of 4 weeks which can be completed partially in third semester and fourth semester or in at one time).	-	-	-	-	-	-	-	Credits To be evaluated in VII Sem.
		Total	**15**	**4**	**8**	**220**	**100**	**380**	**700**	**23**

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

Semester V

(BTEXPE 504) Program Elective 2 (Group A)	(BTEXOE 505) Open Elective 1 (Group B)
(A) Electromagnetic Field Theory	(A) Digital System Design
(B) VLSI Design & Technology	(B) Artificial Intelligence and Machine learning
(C) Electronics in Smart City	(C) Optimization Techniques
(D) Electronics Measurements and Instruments	(D) Project Management and Operation Research
(E) Mixed Signal Design	(E) Augmented, Virtual and Mixed Reality
(F) Automotive Electronics	

Semester VI

(BTEXPE 603) Program Elective 3 (Group A)	(BTEXOE 604) Open Elective 2 (Group B)
(A) Information Theory and Coding	(A) IoT and Industry 4.0
(B) Control System Engineering	(B) Communication Engineering
(C) Electronics Circuit Design	(C) Computer Network & Cloud Computing
(D) Nano Electronics	(D) Industrial Drives and Control
(E) Advanced Digital Signal Processing	(E) Robotics Design

Course Structure for Second Year

B. Tech in Electronics and Computer Engineering

Semester III (Term 3)										
Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
BSC	BTES301	Engineering Mathematics-III	3	1	-	20	20	60	100	4
PCC1	BTECPC302	Electronics Devices & Circuits	3	1	-	20	20	60	100	4
PCC2	BTECPC303	Programming, Data Structure and Algorithm using C	3	1	-	20	20	60	100	4
ESC11	BTESC304	Computer Architecture & Operating System	3	-	-	20	20	60	100	3
ESC12	BTESC305	Digital Electronics and Microprocessor	3	-	-	20	20	60	100	3
LC1	BTECPL306	Electronics Devices & Circuits Lab & Programming, Data Structure and Algorithm using C Lab	-	-	4	60	-	40	100	2
Seminar	BTECS307	Seminar-I	-	-	4	60	-	40	100	2
Internship	BTES211P	Internship –I (Evaluation)	-	-	-	-	-	-	-	Audit
			15	**3**	**8**	**220**	**100**	**380**	**700**	**22**

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 Second Year

B. Tech in Electronics and Computer Engineering

Semester IV (Term 4)										
Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				
			L	T	P	CA	MSE	ESE	Total	Credit
PCC3	BTECPC401	Python Programming	3	1	-	20	20	60	100	4
PCC4	BTECPC402	Database Management System	3	1	-	20	20	60	100	4
HSSMC3	BTHM403	Basic Human Rights	3	-	-	20	20	60	100	3
BSC8	BTBS404	Probability Theory and Random Processes	3	-	-	20	20	60	100	3
PEC-1	**BTECPE405**	**Professional Elective Courses –I**	3	1	-	20	20	60	100	4
	BTECPE405 A	1.Microcontroller and Advanced Processor								
	BTECPE405 B	2. Data Analysis								
	BTECPE405 C	3.Electromagnetic Engineering and Wave Propagation								
	BTECPE405 D	4.Linux OS								
LC2	BTECPL406	Python Programming Lab and Database Management System Lab	-	-	4	60	-	40	100	2
Seminar	BTECS407	Seminar - II	-	-	4	60	-	40	100	2
Internship	BTECP408	Internship -II	-	-	-	-	-	-	-	Audit
			15	**3**	**8**	**220**	**100**	**380**	**700**	**22**

Note: The Lab of Professional Elective Courses –I (PEC1) (BTECPE405) should be conducted as per syllabus contents.

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

Second Year (Semester –IV)

Basic Human Rights

BTHM403	Basic Human Rights	HSSMC3	3L- 0T -0P	3 Credits

Teaching Scheme	Examination Scheme
Lecture: 3 hrs./week	Continuous Assessment : 20 Marks Mid Semester Exam:20 Marks End Semester Exam: 60 Marks (Duration 03 hrs.)

Pre-Requisites: None

Course Objectives:

1. To train the young minds facing the challenges of the pluralistic society and the rising conflicts and tensions in the name of particularistic loyalties to caste, religion, region and culture.
2. To give knowledge of the major "signposts" in the historical development of human rights, the range of contemporary declarations, conventions, and covenants.
3. To enable them to understand the basic concepts of human rights (including also discrimination, equality, etc.), the relationship between individual, group, and national rights.
4. To develop sympathy in their minds for those who are denied rights.
5. To make the students aware of their rights as well as duties to the nation

Course Outcomes:

On completion of the course, students will be able to:

CO1	Students will be able to understand the history of human rights.
CO2	Students will learn to respect others caste, religion, region and culture.
CO3	Students will be aware of their rights as Indian citizen.
CO4	Students will be able to understand the importance of groups and communities in the society.
CO5	Students will be able to realize the philosophical and cultural basis and historical perspectives of human rights.

Course Contents:

UNIT 1: The Basic Concepts: **[08 Hours]**

Individual, group, civil society, state, equality, justice. Human Values, Human rights and Human Duties: - Origin, Contribution of American bill of rights, French revolution. Declaration of independence, Rights of citizen, Rights of working and exploited people.

UNIT 2 Fundamental rights and economic program: **[07 Hours]**

Society, religion, culture, and their inter relationship. Impact of social structure on human behavior, Social Structure and Social Problems: - Social and communal conflicts and social harmony, rural poverty, unemployment, bonded labor.

UNIT 3: Migrant workers: **[07 Hours]**

Migrant workers and human rights violations, human rights of mentally and physically challenged. State, Individual liberty, Freedom and democracy. NGOs and human rights in India: - Land, Water, Forest issues.

UNIT 4: Human rights in Indian constitution and law **[07 Hours]**

i) The constitution of India: Preamble ii) Fundamental rights. iii) Directive principles of state policy. iv) Fundamental duties. v) Some other provisions.

UNIT 5: Universal declaration: **[07 Hours]**

Universal declaration of human rights and provisions of India. Constitution and law. National human rights commission and state human rights commission

Text / Reference Books

1. Shastry, T. S. N., India and Human rights: Reflections, Concept Publishing Company India (P Ltd.), 2005

2. Nirmal, C.J., Human Rights in India: Historical, Social and Political Perspectives(Law in India), Oxford India

Dr. Babasaheb Ambedkar Technological University, Lonere.

Dr. Babasaheb Ambedkar Technological University

(Established as a University of Technology in the State of Maharashtra)

(under Maharashtra Act No. XXIX of 2014)

P.O. Lonere, Dist. Raigad, Pin 402 103, Maharashtra

Telephone and Fax. : 02140 -275142

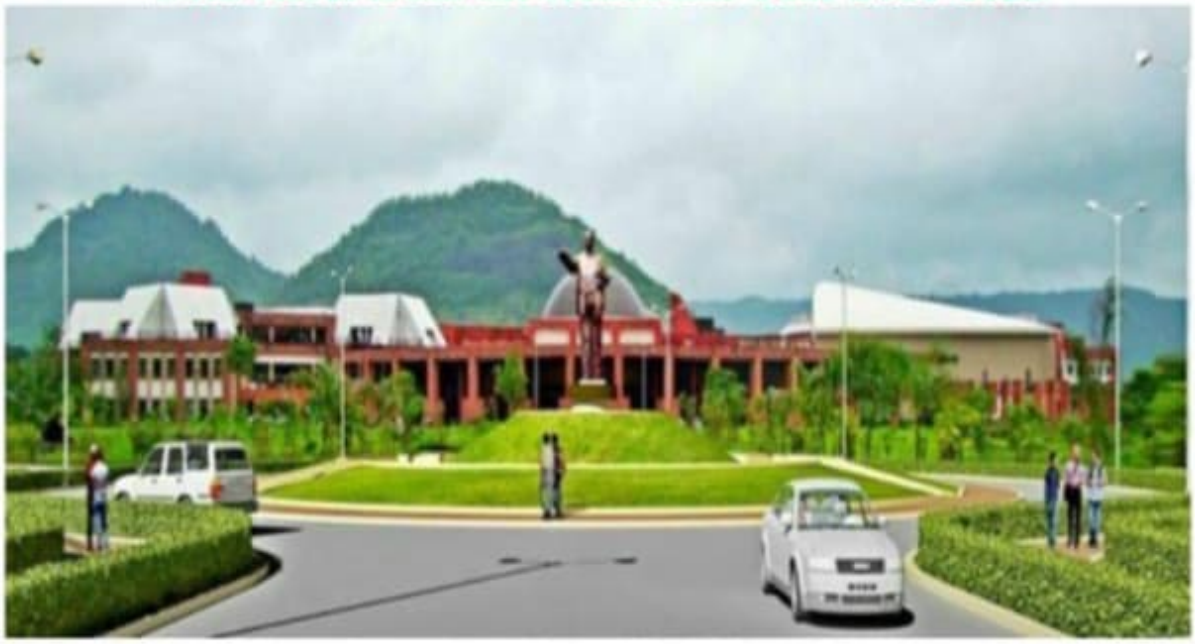
www.dbatu.ac.in

COURSE STRUCTURE AND SYLLABUS

for

Second Year B. Tech. Electrical Engineering / Electrical Engineering (Electronics and Power)/ Electrical & Electronics Engg / Electrical & Power Engineering

With effect from the Academic Year 2021-2022



Dr. Babasaheb Ambedkar Technological University, Lonere.

B.Tech (Electrical Engineering / Electrical Engineering (Electronics and Power)/ Electrical & Electronics Engg / Electrical & Power Engineering)

Curriculum of Second Year

Semester III

Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
			L	T	P	CA	MSE	ESE	Total	
BSC	BTBS301	Engineering Mathematics-III	3	1	-	20	20	60	100	**4**
PCC1	BTEEC302	**Electrical Machines-I**	3	1	-	20	20	60	100	**4**
PCC2	BTEEC303	Electrical and Electronics Measurement	3	1	-	20	20	60	100	**4**
HSSMC	BTHM304	Basic Human Rights	2	-	-					**Audit**
ESC	BTES305	**Engineering Material Science**	3	-	-	20	20	60	100	**3**
LC	BTEEL306	Electrical Machines-I Lab			2	60		40	100	**1**
LC	BTEEL307	Electrical and Electronics Measurement Lab			2	60		40	100	**1**
Project	BTEEP308	Mini Project-I			4	60		40	100	**2**
Internship	BTES211P	Internship-I Evaluation						50	50	**1**
			14	3	8	260	80	410	750	**20**

BTHM304 BASIC HUMAN RIGHTS **Audit Course**

Unit 1: The Basic Concepts **6Hrs**

Individual, Group, Civil Society, State, Equality, Justice, Human Values: - Humanity, Virtues, Compassion.

Unit 2: Human Rights and Human Duties: **6 Hrs**

Origin, Civil and Political Rights, Contribution of American Bill of Rights, French Revolution, Declaration of Independence, Rights of Citizen, Rights of working and Exploited people, Fundamental Rights and Economic program, India's Charter of freedom

Unit 3: Society, Religion, Culture, and their Inter-Relationship **6 Hrs**

Impact of Social Structure on Human behaviour, Roll of Socialization in Human Values, Science and Technology, Modernization, Globalization, and Dehumanization.

Unit 4: Social Structure and Social Problems **6 Hrs**

Social and Communal Conflicts and Social Harmony, Rural Poverty, Unemployment, Bonded Labour, Migrant workers and Human Rights Violations, Human Rights of mentally and physically challenged.

Unit 5: State, Individual Liberty, Freedom and Democracy **6 Hrs**

The changing of state with special reference to developing countries, Concept of development under development and Social action, need for Collective action in developing societies and methods of Social action, NGOs and Human Rights in India: - Land, Water, Forest issues.

Unit 6: Human Rights in Indian Constitution and Law **6 Hrs**

The constitution of India:

(i) Preamble

(ii) Fundamental Rights

(iii) Directive principles of state policy

(iv) Fundamental Duties

(v) Some other provisions

Universal declaration of Human Rights and Provisions of India, Constitution and Law, National Human Rights Commission and State Human Rights Commission

Reference Books:

1. Shastry, T. S. N., India and Human rights: Reflections, Concept Publishing Company India (P Ltd.), 2005.

2. Nirmal, C.J., Human Rights in India: Historical, Social and Political Perspectives (Law in India), Oxford India.

Dr. Babasaheb Ambedkar Technological University, Lonere

(Applicable to all the departments of UG Engineering)

New subjects being prescribed for all the students admitted to first year from A.Y. 2022 – 23.

Following subjects are made mandatory for the second year students in all the branches of engineering.

1) **Universal Human Values II**
2) **Constitution of India**

Constitution of India

Course Structure:

Course Code	Course Title	Teaching Scheme			Examination Scheme					
		L	T	P	Continuous Assessment (1)	Continuous Assessment (2)	Mid Term Test	Evaluation	Total Marks	Credits
BTHM301/ BTHM401	Indian Constitution	2	0	0	0	0	0	50	50	00

Teaching Scheme: 2 Lectures / Week

The Constitution of India:

1. Preamble
2. Fundamental Rights
3. Directive principles of state policy
4. Fundamental Duties
5. Some other provisions

Universal declaration of Human Rights and Provisions of India, Constitution and Law, National Human Rights Commission and State HumanRights Commission.

Course Objectives:

1. To familiarize the students with the key elements of the Indian constitution.
2. To enable students to grasp the constitutional provisions and values.
3. To acquaint the students with the powers and functions of various constitutional offices and Institutions.
4. To make students understand the basic premises of Indian politics and role of constitution and citizen oriented measures in a democracy.

Course Outcomes:

At the end of the course the students will

CO1: Understand the key aspects of the Indian Constitution.

CO2: Comprehend the structure and philosophy of the Constitution

CO3: Understand the power and functions of various constitutional offices and institutions.

CO4: Realise the significance of the constitution and appreciate the role of constitution and citizen oriented measures in a democracy.

Module.1 Introduction **(5 Lectures)**

Constitution' meaning of the term, Indian Constitution: Sources and constitutional history, Features: Citizenship, Preamble, Fundamental Rights and Duties, Directive, Principles of State Policy

Module.2 Union Government and its Administration **(5 Lectures)**

Structure of the Indian Union: Federalism, Centre- State, relationship, President: Role, power and position, PM and Council of ministers, Cabinet and Central Secretariat, Lok Sabha, Rajya Sabha

Module.3 State Government and its Administration **(4 Lectures)**

Governor: Role and Position, CM and Council of ministers, State Secretariat: Organisation, Structure and Functions

Module.4 Local Administration **(5 Lectures)**

District's Administration head: Role and Importance, Municipalities: Introduction, Mayor and role of Elected Representative, CEO of Municipal Corporation, Pachayati Raj: Introduction, PRI: Zila Pachayat, Elected officials and their roles, CEO Zila Pachayat: Position and role, Block level: Organizational Hierarchy (Different departments), Village level: Role of Elected and Appointed officials, Importance of grass root democracy

Module.5 Election Commission **(5 Lectures)**

Election Commission: Role and Functioning, Chief Election Commissioner and Election Commissioners, State Election Commission: Role and Functioning, Institute and Bodies for the welfare of SC/ST/OBC and women

TEXT/REFERENCE BOOKS:

1. Sastry, T. S. N., (2005). India and Human rights: Reflections, Concept Publishing Company India (P Ltd.),
2. Nirmal, C.J., (1999). Human Rights in India: Historical, Social and Political Perspectives (Law in India), Oxford India.

UNIVERSAL HUMAN VALUES - II

Course Code	Course Title	Teaching Scheme			Examination Scheme				
		L	T	P	CA-1	CA-2	Mid Term Test	End Sem Exam	Total Marks
BTHM302/ BTHM402	Universal Human Values - II	3	1	0	10	10	20	60	100

Course Objectives:

1. To help the students appreciate the essential complementarily between 'VALUES' and 'SKILLS' to ensure sustained happiness and prosperity which are the core aspirations of all human beings
2. To facilitate the development of a Holistic perspective among students towards life and profession as well as towards happiness and prosperity based on a correct understanding of the Human reality and the rest of existence. Such a holistic perspective forms the basis of Universal Human Values and movement towards value-based living in a natural way
3. To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct, trustful and mutually fulfilling human behavior and mutually enriching interaction with Nature.

Course Outcomes:

CO1: To become more aware of themselves, and their surroundings (family, society, nature)

CO2: They would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind.

CO3: They would also become sensitive to their commitment towards what they have understood (human values, human relationship and human society).

CO4: They would be able to apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.

Syllabus:

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 Fulfilment 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

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

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 - PanditSunderlal
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)

Dr. Babasaheb Ambedkar Technological University, Lonere

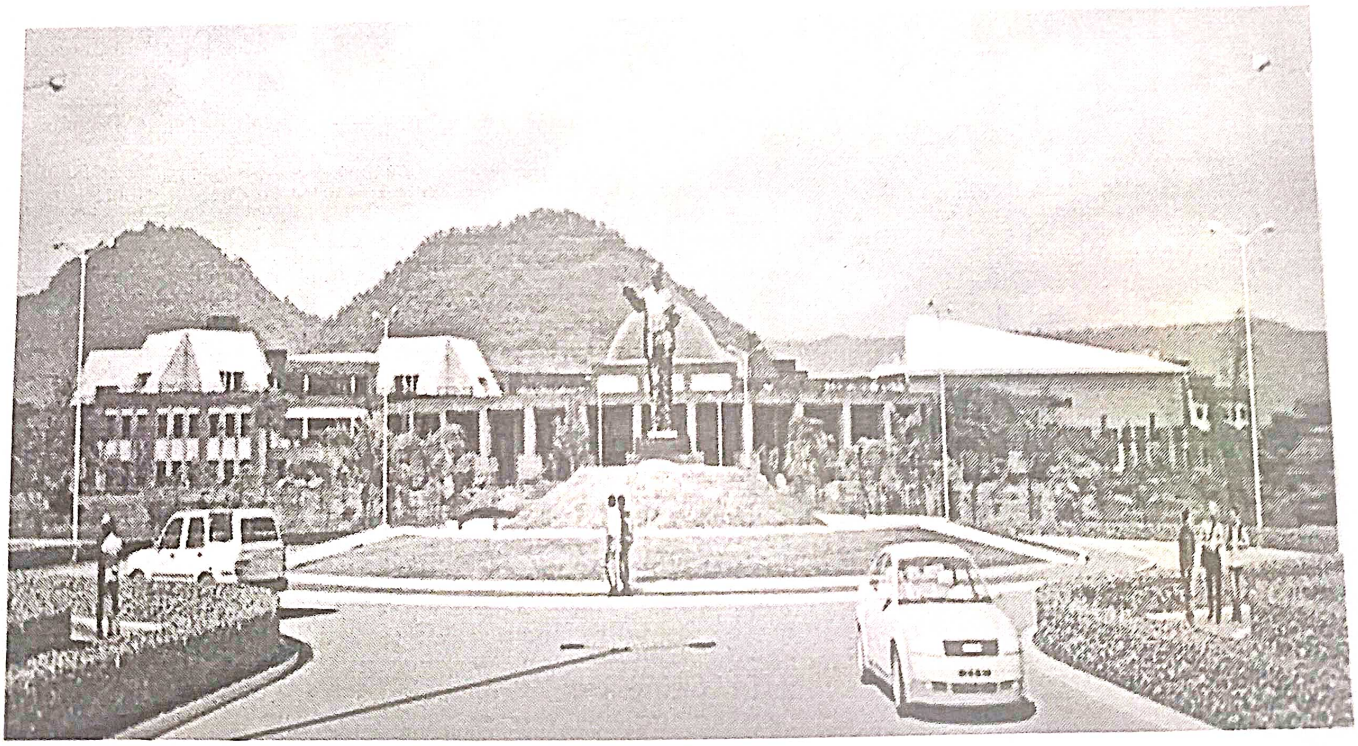
Dr. Babasaheb Ambedkar Technological University
(Established as a University of Technology in the State of Maharashtra)
(Under Maharashtra Act No XXIX of 2014)
P.O. Lonere, Dist. Raigad, Pin 402 103, Maharashtra Telephone and Fax: 02140 – 275142
www.dbatu.ac.in

CURRICULUM

UNDERGRADUATEPROGRAMME

S. Y. B. Tech. (Instrumentation Engineering)

With effect from the Academic Year2021-2022



B. Tech in Instrumentation Engineering

Curriculum for Second Year

Semester III

SR. No.	Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE	Total	
1	BSC	BTBS301	Engineering Mathematics – III	3	1	-	20	20	60	100	4
2	PCC 1	BTINC302	Sensor and Transducer	3	1	-	20	20	60	100	4
3	PCC 2	BTINC303	Network Analysis and Synthesis	3	1	-	20	20	60	100	4
4	ESC	BTINES304	Analog Electronics	3	1	-	20	20	60	100	4
5	LC	BTINL305	Sensor and Transducer Lab	-	-	2	60	-	40	100	1
6	LC	BTINL306	Analog Electronics Lab	-	-	2	60	-	40	100	1
7	Seminar	BTINS307	Seminar I	-	-	4	60	-	40	100	2
8	Internship	BTINS211P	Internship – I Evaluation	-	-	-	-	-	50	50	1
Total				**12**	**4**	**8**	**260**	**80**	**410**	**750**	**21**

Semester IV

SR. No	Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE	Total	
1	PCC 1	BTINC401	Digital Electronics	3	1	-	20	20	60	100	4
2	PCC 2	BTINC402	Feedback Control System	3	1	-	20	20	60	100	4
3	HSSMC	BTHM403	Industrial Management and Economics	4	-	-	20	20	60	100	4
4	BSC	BTINBS404	Electrical and Electronics Measurement	3	1	-	20	20	60	100	4
5	PEC 1	BTINPE405	Group A	3	1	-	20	20	60	100	4
6	LC	BTINL406	Digital Electronics Lab	-	-	2	60	-	40	100	1
7	LC	BTINL407	Feedback Control System Lab	-	-	2	60	-	40	100	1
8	Seminar	BTINM408	Mini Project I	-	-	4	60	-	40	100	2
9	Internship	BTINP409	Field Training / Internship/Industrial Training (minimum of 4 weeks which can be completed partially in third semester and fourth semester or in at one time).	-	-	-	-	-	-	-	Credits To be evaluated in V Sem.
Total				**16**	**4**	**8**	**220**	**100**	**380**	**700**	**24**

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

- **Important Note: Minimum Eight Experiment to perform based on the syllabus for the laboratory subject.**

Group A [Sem- IV] (Professional Elective)

Sr. No.	Course Code	Course Title
01	BTINPE405 A	Microprocessor based systems
02	BTINPE405 B	Industrial Safety
03	BTINPE405 C	Signals and Systems

Dr. Babasaheb Ambedkar Technological University, Lonere

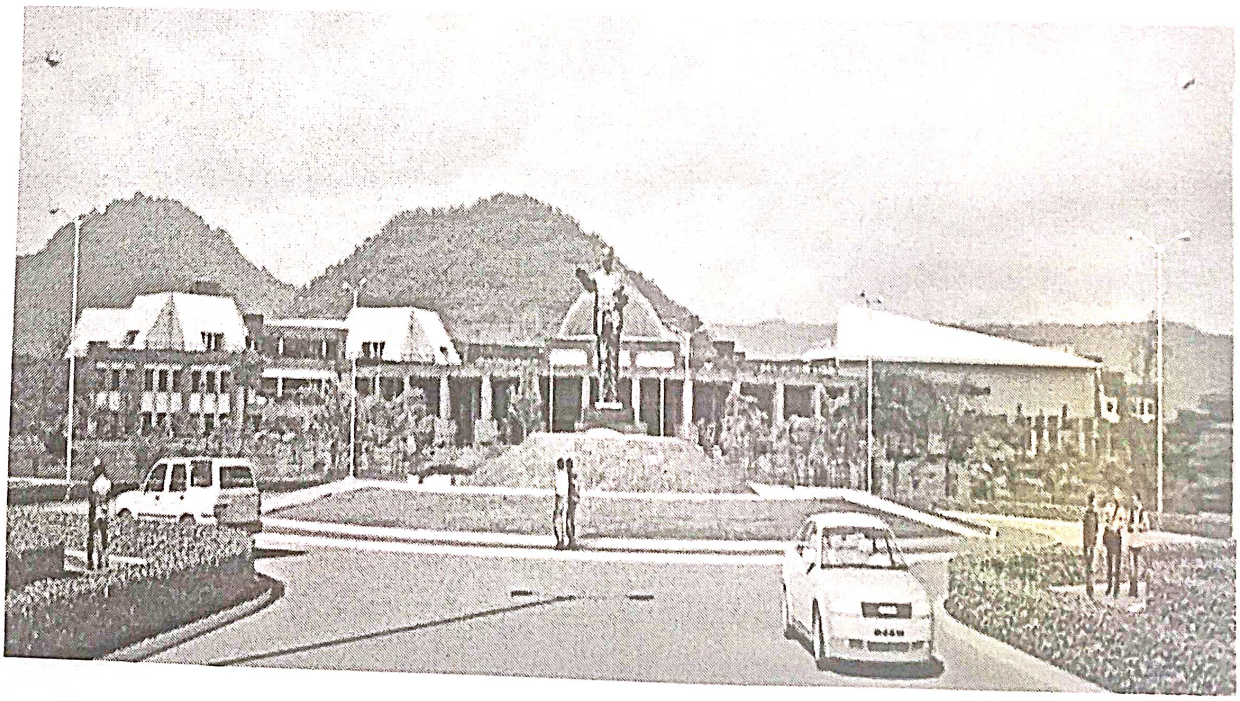
Dr. Babasaheb Ambedkar Technological University
(Established as a University of Technology in the State of Maharashtra)
(Under Maharashtra Act No XXIX of 2014)
P.O. Lonere, Dist. Raigad, Pin 402 103, Maharashtra Telephone and Fax: 02140 – 275142
www.dbatu.ac.in

CURRICULUM

UNDERGRADUATEPROGRAMME

T. Y. B.Tech. (Instrumentation Engineering)

With effect from the Academic Year2022-2023



DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

B. Tech in Instrumentation Engineering

Curriculum for Third Year

Semester V

SR. No	Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE	Total	
1	PCC 1	BTINC501	Process Loop Components	3	1	-	20	20	60	100	4
2	PCC 2	BTINC502	Microprocessor and Microcontroller	3	1	-	20	20	60	100	4
3	PCC 3	BTINC503	Digital Signal Processing	3	1	-	20	20	60	100	4
4	PEC 2	BTINPE504	Group B	3	-	-	20	20	60	100	3
5	OEC 1	BTINOE505	Group C	3	-	-	20	20	60	100	3
6	HSSMC	BTHM506	Human Rights	-	-	-	-	-	-	-	Audit
7	LC	BTINNL507	Process Loop Components Lab	-	-	2	60	-	40	100	1
8	LC	BTINNL508	Digital Signal Processing Lab	-	-	2	60	-	40	100	1
9	Project	BTINM509	Mini Project I	-	-	4	60	-	40	100	2
10	Internship	BTINP408	Internship – 2 Evaluation	-	-	-	-	-	50	50	1
Total				**15**	**3**	**8**	**220**	**100**	**430**	**850**	**23**

Semester VI

SR. No	Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE	Total	
1	PCC 1	BTINC601	Digital Control System	3	1	-	20	20	60	100	4
2	PCC 2	BTINC602	Industrial Automation and Control	3	1	-	20	20	60	100	4
3	PCC 3	BTINC603	Power Electronics and Drives	3	1	-	20	20	60	100	4
4	PEC 3	BTINPE604	Group D	3	-	-	20	20	60	100	3
5	OEC 2	BTINOE605	Group E	3	-	-	20	20	60	100	3
6	LC	BTINL606	Industrial Automation and Control Lab	-	-	2	60	-	40	100	1
7	LC	BTINL607	Power Electronics and Drives Lab	-	-	2	60	-	40	100	1
8	Project	BTINM608	Mini Project II	-	-	4	60	-	40	100	2
9	Internship	BTINP609	Field Training / Internship/Industrial Training (minimum of 4 weeks which can be completed partially in third semester and fourth semester or in at one time).	-	-	-	-	-	-	-	Credits To be evaluated in VII Sem.
Total				**15**	**3**	**8**	**220**	**100**	**380**	**800**	**22**

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

- **Important Note: Minimum Eight Experiment to perform based on the syllabus for the laboratory subject.**

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Group B [Sem - V] (Professional Elective)

Sr. No.	Course Code	Course Title
01	BTINPE504 A	Multi-sensors and Data Fusion
02	BTINPE504 B	Linear Techniques
03	BTINPE504 C	Soft Computing

Group C [Sem - V] (Open Elective)

Sr. No.	Course Code	Course Title
01	BTINOE505 A	Control System
02	BTINOE505 B	Artificial neural network
03	BTINOE505 C	Biomedical Instrumentation

Group D [Sem - VI] (Professional Elective)

Sr. No.	Course Code	Course Title
01	BTINPE604 A	Instrumentation Unit Operations
02	BTINPE604 B	Power Plant instrumentation
03	BTINPE604 C	Embedded Systems

Group E [Sem - VI] (Open Elective)

Sr. No.	Course Code	Course Title
01	BTINOE605 A	Industrial data communication
02	BTINOE605 B	Fiber Optics and Laser instrumentation
03	BTINOE605 C	Robotics and Control

Dr.BabasahebAmbedkarTechnologicalUniversity,Lonere

Dr. Babasaheb Ambedkar Technological University
(Established as a University of Technology in the State of Maharashtra)
(Under Maharashtra Act No XXIX of 2014)
P.O. Lonere, Dist. Raigad, Pin 402 103, Maharashtra Telephone and Fax: 02140 – 275142
www.dbatu.ac.in

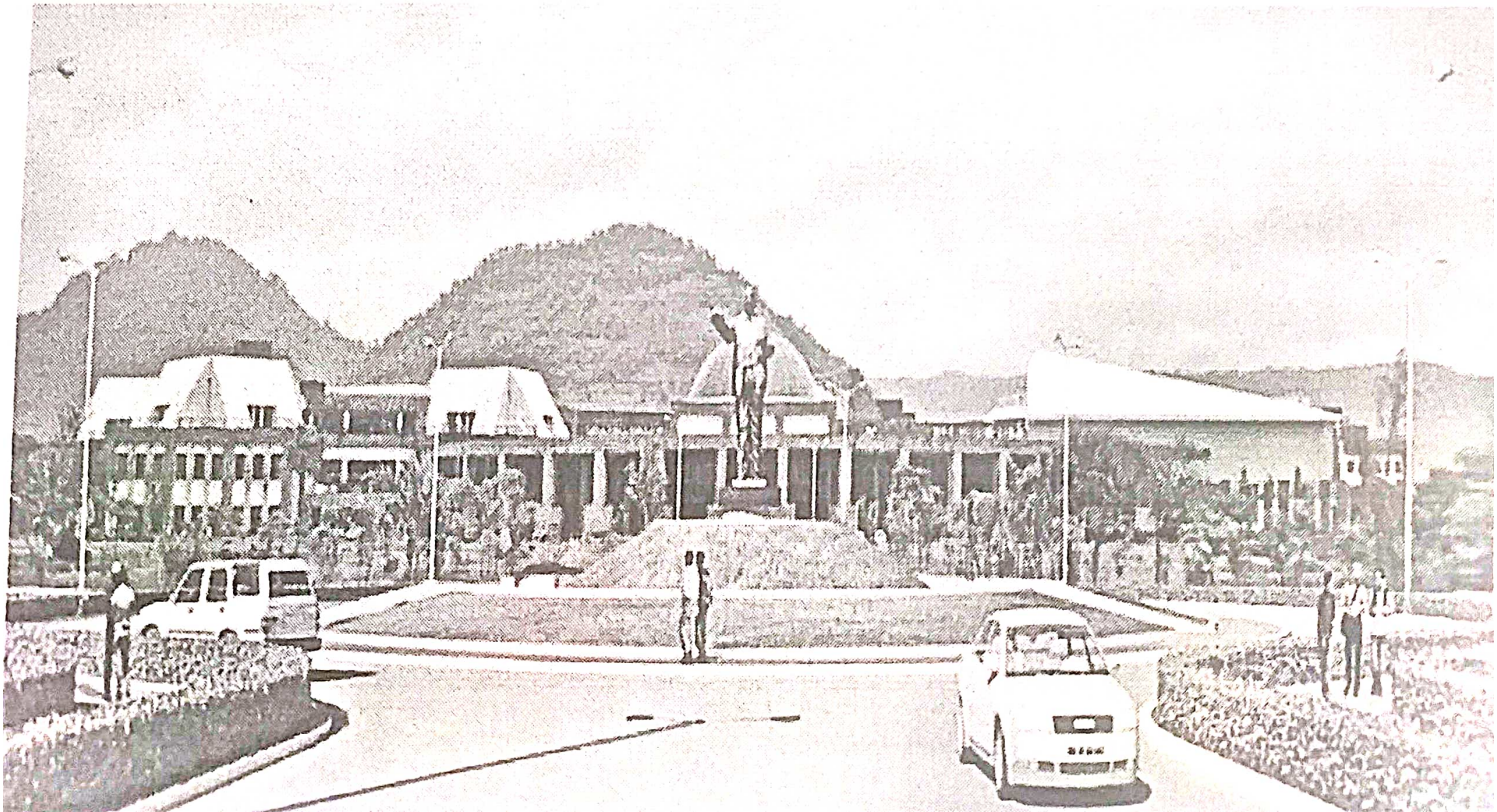
CURRICULUM

UNDERGRADUATEPROGRAMME

Final Year B.Tech.

(Instrumentation Engineering/Instrumentation & Control)

With effect from the Academic Year2023-2024



DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

B. Tech in Instrumentation Engineering

Curriculum for Final Year

Semester VII

SR. No	Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE	Total	
1	PCC 1	BTINC701	Process Instrumentation and Control	4	-	-	20	20	60	100	4
2	PEC 4	BTINPE702	Instrumentation System Design	3	-	-	20	20	60	100	3
3	OEC 3	BTINOE703	Group F	3	-	-	20	20	60	100	3
4	OEC 4	BTINOE704	Group G	3	-	-	20	20	60	100	3
5	HSSMC	BTHM705	Group H	3	-	-	20	20	60	100	3
6	HSSMC	BTHM706	Project Engineering and Management	-	-	-	-	-	-	-	Audit
7	LC	BTINL707	Process Instrumentation Lab	-	-	2	60	-	40	100	1
8	LC	BTINL708	Instrumentation System Design Lab			2	60		40	100	1
9	Project	BTINM709	Project Phase – I	-	-	4	60	-	40	100	2
10	Internship	BTINM609	Internship – 3 Evaluation	-	-	-	-	-	50	50	1
			Total	**16**	**0**	**8**	**220**	**100**	**430**	**850**	**21**

Semester VIII

SR. No	Course Category	Course Code	Course Title	Teaching Scheme			Evaluation Scheme				Credit
				L	T	P	CA	MSE	ESE	Total	
1	PEC5	BTINPE801	NPTEL – online courses	3	-	-	20	20	60	100	03
2	Project/ Internship	BTINP802	Project work/ Internship	-	-	24	60	-	40	100	12
			Total	-	-	24	60	-	40	200	15

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

- **ImportantNote:MinimumEightExperimenttoperformbasedonthesyllabusforthe laboratorysubject.**

Group F [Sem - VII] (Professional Elective)

Sr. No.	Course Code	Course Title
01	BTINPE703 A	Industrial Project Planning and Estimation
02	BTINPE703 B	Agriculture Instrumentation
03	BTINPE703 C	Environmental Instrumentation

Group G [Sem - VII] (OpenElective)

Sr. No.	Course Code	Course Title
01	BTINOE704 A	Image Processing
02	BTINOE704 B	Internet of Things
03	BTINOE704 C	Building Automation

Group H [Sem - VII] (OpenElective)

Sr. No.	Course Code	Course Title
01	BTINOE705 A	Analytical Instrumentation
02	BTINOE705 B	Adaptive Control System
03	BTINOE705 C	Automobile Instrumentation

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

NPTEL – online courses

Sr. No.	Course Name	Duration (Weeks)	Institute offering course	Name of Professor
1	Analog Circuits And Systems Through SPICE Simulation	12 Week	IIT Kharagpur	Prof. Mrigank Sharad
2.	Computer Aided Power System Analysis	12 Week	IIT Roorkee	Prof. Biswarup Das
3.	Control Engineering	12 Week	IIT Madras	Prof. RamkrishnaPasumarthy
4.	DC Power Transmission Systems	12 Week	IIT Madras	Prof. Krishna S.
5.	Fundamentals Of Power ElectronicsSystems	12 Week	IISc Bangalore	Prof. Vivek Agarwal, Prof. L. Umanand
6.	Biomedical Signal Processing	12 Week	IIT Kharagpur	Prof.SudiptaMukhopadhyay

Dr.Vasantdada Patil Shetkari Shikshan Mandal's

Padmabhooshan Vasantraodada Patil Institute of Technology,Budhgaon, Sangli

(NAAC, NBA Accredited)

Recognized by AICTE New Delhi & Government of Maharashtra

Affiliated to Dr. Babasaheb Ambedkar Technological University Lonere, Raigad

"DEEKSHARAMBH"

Journey towards Happiness

STUDENT INDUCTION PROGRAM REPORT

2023-24

8 August,2023 to 22 August,2223

ORGANIZER

First Year Engineering Department, PVPIT, Budhgaon.

INDEX

INAUGURATION

The Student Induction Program is prescribed and mandatory program for newly admitted students in all the engineering colleges. The inauguration ceremony of Student Induction program in PVPIT was endowed with valuable support and guidance of Hon. Shri. Vishaldada Patil (Chairman,Dr.VPSSM,Sangli)and Hon. Shri. Amitdada Patil (Trustee,Dr.VPSSM,Sangli).

Dr. Basavaraj Teli (District Superintendent of Police) was invited as chief guest. Hon.P.L.Rajput (Chairman,Governing Council, Dr.VPSSM,Sangli), Hon. Adinath Magdum (Secretary P. V. P. IT Budhgaon), Dr. B.S. Patil (Principal) Dr. Mrs. A. A. Patil (Head,First Year Department), Dr. K. K. Pandyaji Academic Dean of the college, Dr. S. S. Kulkarni (R&D Dean) and HODs of all respective departments of the college were present at this event.

The guests and dignitaries lit the lamp and inaugurated the event. The president of the function Hon. P. L. Rajput welcomed chief Dr. Basavaraj Teli (District Superintendent of Police). On this occasion Prof. S.E. Narwade gave brief information about (SIP). Mrs. Ashwini Lad introduced the Chief guest.

Chief guest of the program District Superintendent of Police Dr. Basavaraj Teli Sir in his talk convinced how educational curriculum has the potential to fulfil one's dreams in life. So advised to take college life seriously. He gave examples from different faculties while convincing that one should work hard to fulfil one's dreams. He guided the youth on what precautions should be taken, what habits should be practiced in their personal and social life.

Trustee of the organization Hon. Mr. Amitdada Patil explained the purpose of this entire program to the students and also guided the students about the importance of engineering field, its challenges and opportunities.

Dr. Anushka Patil Head, First Year Engineering Dept. in her speech explained teaching learning and evaluation scheme. Prof. M. C. Butale (Exam controller,PVPIT) explained examination scheme and evaluation process of the University. Academic Dean Dr. K K Pandyaji offered vote of thanks.

The program was organized First Year Engineering Department. Dr. Mrs. A. A. Patil and Mr. S. E.Narwade coordinated.The program was anchored by Mr.Amit Kumar Chavan.

INAUGURATION

Mentoring and Universal Human Values

Mentoring and Universal Human Values

Mentoring and connecting the students with faculty members is the most important part of student induction.

Mentoring takes place in the context and setting of *Universal Human Values*. It gets the student to explore oneself and experience the joy of learning, prepares one to stand up to peer pressure and take decisions with courage, be aware of relationships and be sensitive to others, understand the role of money in life and experience the feeling of prosperity. Need for character building has been underlined by many thinkers, universal human values provide the base.

Methodology of teaching this content is extremely important. It must not be through do's and don'ts, but by getting the students to explore and think by engaging them in a dialogue. It is best taught through group discussions and real life activities rather than lecturing. The role of group discussions, however, with clarity of thought of the teachers cannot be over emphasized. It is essential for giving exposure, guiding thoughts and realizing values.

The teachers must come from all the departments rather than only one department like HSS or from outside of the Institute. Experiments in this direction at IIT (BHU) are noteworthy and one can learn from them.

Discussions would be conducted in small groups of about 20 students with a faculty mentor each. It is to open thinking towards the self. Universal Human Values discussions could even continue for rest of the semester as a normal course, and not stop with the induction program.

Besides drawing the attention of the student to larger issues of life, it would build relationships between teachers and students which last for their entire 4-year stay and possibly beyond.

Chapter No.	Name of the Module	Scheduled and Conducted date
1.	**Aspirations and Family Expectations**	9th August 2023
2.	**Purpose of the Course**	10th August 2023
3.	**Gratitude**	11th August 2023
4.	**Competition and Cooperation**	12th August 2023
5.	**Competition and Excellence**	14th August 2023
6.	**Interaction and Ragging**	17th August 2023
7.	**Self and Body**	18th August 2023
8.	**Peer Pressure**	21th August 2023
9.	**Self Confidence**	22nd August 2023
10	**Peer pressure and English**	22nd August 2023

SIP Batches & Mentor's List

Dr. Anushka A Patil –Chief Cordinator and HoD, First Year Engineering Dept

Mr. Sarjerao Narwade- Co-coordinator

Sr. No.	Name of Mentor	Dept.	Name of Team
1.	Mr. S G Khandagale	Mech	Trust
2.	Mr. C D Patil	Mech	Guidance
3.	Ms. A P Lad	Mech	Affection
4.	Mr. Akshay Pawar	Mech	Care
5.	Mr. A K Kusanale	Civil	Reverence
6.	Mr. Kakmare	Civil	Glory
7.	Mr. S E Narwade	First Year Engineering	Gratitude
8.	Mr A K Chavan	First Year Engineering	Love
9.	Dr. S L Patil	First Year Engineering	Honesty
10.	Mr. Anish Shaikh	First Year Engineering	Justice
11.	Ms. D A Lavate	First Year Engineering	Knowledge
12.	Ms. P B Patil	First Year Engineering	Compassion
13.	Ms. A K Patil	First Year Engineering	Cooperation
14.	Ms A V Patil	First Year Engineering	Kindness
15.	Mr R U Yadav	First Year Engineering	Freedom
16.	Ms Swapanli Patil	CSE	Inspiration
17.	Ms Mayuri Patil	CSE	Motivation
18.	Ms R R Jagtap	CSE	Harmony

Literary Activity & Proficiency Modules

1) Newspaper Reading & Discussion on Current Affairs (TOI, IE & Loksatta etc.)

2) Informal Interaction & Discussion

Literary Activity & Proficiency Modules

Diagnostic Tests:

I) Engineering Physics:

The diagnostic test of physics composed of fundamentals of physic. It is to revise basic concepts which learnt by them in previous classes. The test will help to learn some engineering aspects of physics which helpful to encourage them to enhance their confidence,

II) Engineering Mathematics:

Science and mathematics are integral parts of engineering. Science teaches us about the laws of the natural world and mathematics helps us to establish relationships among different quantities. Both subjects are of paramount importance if you are planning to study engineering at the university level.

III) Engineering Chemistry:

Engineering requires applied science, and chemistry is the center of all science. The more chemistry an engineer understands, the more beneficial it is. In the future, global problems and issues will require an in-depth understanding of chemistry to have a global solution. It helps to find out metal strength, study and analysis of various samples.

IV) English:

As technology advances globally, engineers must be able to communicate across national and cultural boundaries, and English is the vehicle for professionals advancing technology today. The test included questions on basic grammar of English language.

Sr.No.	Dignonstic Test	Scheduled and Conducted date
1.	Engineering Chemistry	9th August 2023
2.	Engineering Mathematics	11th August 2023
3.	English	9th August 2023
4.	Engineering Physics	9th August 2023

Literary Activity & Proficiency Modules

Employability Skills Training

Interaction with Institute Innovation Council

Lectures and Workshops of Eminent People

Resource Person :Dr. Dileep Patwardhan
Founder, Nandadeep Netralay, Sangli
Date: 18 th August 2023 at 10:00 AM
Venue: Auditorium, PVPIT, Budhgaon

On 18th Aug.2023 in the expert talk series under Student Induction Program and eminent guest Dr. Dileep Patwardhan, founder of Nandadeep Netralay, Sangli was invited. The function began with the felicitation of guest of honour and the speaker of the day Dr. Dileep Patwardhan by Dr.B.S. Patil Principal, PVPIT. The guest was introduced by Mrs. Ashwini Lad.

In the introduction Dr.B.S. Patil Principal, PVPIT in his address, told that while living a life, one has to develop a vision to choose what is right and what is wrong. The morality and ethics gives us strength.

Chief guest and speaker of program Hon. Dr. Dilip Patwardhan started his speech with Divine Universal Prayer. The basic theme of his lecture was Human Values. He explained with examples how money and virtue are essential. It is important to have wisdom and it should be acquired through experience, he said. He also explained the values of Truth, Honesty, Loyalty, Love and Peace with examples in his speech.

The program was coordinated by Dr. Anushka Patil, Head of the First Year Engineering Department and Mr. Sarjerao Narwade. Prof. Amit Kumar Chavan anchored the event. Ms. Prajakta Patil offered vote of thanks

Lectures and Workshops of Eminent People

Lectures and Workshops of Eminent People

Resource Person : Mr. Bhaskar Sadakale
Date: 18th Aug.2023 at 03:00 PM
Venue: Auditorium, PVPIT, Budhgaon

On 18th Aug. 2023 in the expert talk series under Student Induction Program an eminent guests Mr. Bhaskar Sadakale was invited. The function began with the felicitation of guests by Dr. Anushka Patil, Head of the First Year Engineering Department . The guest introduction done by Mr. S. E. Narwade.

Mr. Bhaskar Sadakade told Superstitions are not country, religion, culture, community, region, caste, or class-specific, it is widespread and found in every corner of the world. Although all superstitions are not harmful or fatal, the superstitions that violate the fundamental rights of humans and animals cannot be ignored. Years of ignorance have placed India in such a position that change of mentality and introduction of new laws are considered to be the last resort. Experts and behavioural scientists believe that at times of uncertainty, apprehension or emergency, with no more ways around, humans chose to incline towards supernatural beliefs and practices. When all ways are closed and resources worn out, emotions too could lead people towards superstitious practices. With people getting accustomed to the internet and social media, the spread of advertisements on magic healers and gold medalists 'babas' are often seen doing rounds. This is where emotions are used to commit fraud and cheat people. People often think it is the easy way out to achieve what they want. Not only does this cause theft but also claims lives often.

The program was coordinated by Dr. Anushka Patil, Head of the First Year Engineering Department and Mr. Sarjerao Narwade. Mr. Amit Chavan anchored the event and Mr. Ranjit Yadav offered Vote of Thanks.

Lectures and Workshops of Eminent People

Lectures and Workshops of Eminent People

Resourse Person : Mr. Pramod Shankar Patil
Date: 21st Aug. 2023 at 11:00 AM
Venue: Auditorium, PVPIT, Budhgaon

On 21st Aug 2023 in the expert talk series under Student Induction Program an eminent guests Hon. Mr. Pramod Patil Sir (Assistant Professor, Vishwasrao Naik Arts, Commerce and Science College, Shirala. Dist. Sangli.) The function began with the felicitation of guests by B. S. Patil Principal, PVPIT Budhgaon.The guest introduction done by Ashwini Lad

Chief guest Hon. Mr. Pramod Patil Sir (Assistant Professor, Vishwasrao Naik Arts, Commerce and Science College, Shirala. Dist. Sangli.). In his talk convinced the students how important it is to understand the human values by giving living examples. In his lecture, he spoke about the importance of the value of humility. At the same time, he said that others should be respected. In his lecture he told the students some basic mantras like you should like yourself, you should respect yourself, love yourself, believe in yourself, hands should be in the sky and feet should be in the soil. He reinforced "**Students need to understand human value**"

The program was coordinated by Dr. Anushka Patil, Head of the First Year Engineering Department and Mr.Amit Kumar Chavan anchored the event and vote of thanks offered by Mr. Sarjerao Narwade

Lectures and Workshops of Eminent People

Lectures and Workshops of Eminent People

Resource Person : 1) Dr. S. S.Kulkarni(Dean, R &D PVPIT)
2) Mr. Arif Bookseller (Head,Trainning and Placement ,PVPIT)
Date: 22nd November 2022 at 03:00 PM
Venue: Auditorium, PVPIT, Budhgaon

On 22nd Nov.2022 in the expert talk series under Student Induction Program Special guests Dr. S. S. Kulkarni(Dean, R &D PVPIT) and Mr. Arif Bookseller (Head,Trainning and Placement PVPIT) were invited. The function began with the felicitation of guests .

Dr. S. S. Kulkarni(Dean, R &D PVPIT) told that modern engineer is more than just a technical expert. The integration of soft skills into the engineering curriculum equips graduates with the tools necessary to thrive in a profession that demands more than just technical knowledge. By developing collaborative, communication, leadership, problem-solving, and adaptability skills, engineers can excel in their careers and contribute to the success of the industry.

Mr. Arif Bookseller (Head,Trainning and Placement PVPIT) told in his speecPreparing for engineering placements requires a systematic approach and dedication towards the goal. Students should focus on developing their technical skills, communication skills, and problem-solving abilities. They should also stay updated with the latest industry trends and advancements in their field of study. With the right mindset and preparation, students can increase their chances of landing a lucrative job offer during placements. Shoolini University provides the right amount of exposure, facilities, guidance, and mentorship to aspiring young engineers. h

The program was coordinated by Dr. Anushka Patil, Head of the First Year Engineering Department and Student Pratibha Nikam anchored the event and vote of thanks offered student Payal Jadhav.

Lectures and Workshops of Eminent People

Lectures and Workshops of Eminent People

Resource Person : Dr. Sunil Kore
Date: 23rd August 2023 at 10:00 AM
Venue: Auditorium, PVPIT, Budhgaon

On 23rd August .2023 in the expert talk series under Student Induction Program an eminent guest Dr. Sunil Kore was invited. The function began with the felicitation of guests by Dipali Lavate. The guest introduction done by and Pranjali Nemate, a student of the college.

Dr. Sunil Kore Sir in his talk mentioned some important points like the penetration of technology in human life, contribution and importance of engineering field. Personal, social and national goals, educational structures and the role, duties and responsibilities of stakeholders, problems in human life, their causes and necessary preparations to overcome them. A nation becomes richer when people contribute. Get good knowledge It doesn't matter which college you studied for you will be hired by the company. Your contribution to self-development will determine your future in any company.

To be a good engineer you need to be skilled and intellectual, have a broad view of engineering and international knowledge, have good design ability or creativity, understand manufacturing and quality processes, have good communication and presentation skills. mentioned.

Also some interesting motivational videos were shown to the students to boost their confidence.

To become an engineer, students need to follow six things: dream, direction, dedication, determination, discipline, deadline.

The program was coordinated by Dr. Anushka Patil, Head of the First Year Engineering Department and Student Pratibha Nikam anchored the event and vote of thanks offered student Payal Jadhav

Lectures and Workshops of Eminent People

Lectures and Workshops of Eminent People

Resource Person : Archana Mule,
Psychologist Sangli
Date: 24th August 2023 at 10:00 AM
Venue: Auditorium, PVPIT, Budhgaon

On 24th August .2023 in the expert talk series under Student Induction Program and eminent guest Mrs. Archana Mule,Psychologist was invited. The function began with the felicitation of guest of honour and the speaker Archana Mule (Psychologist) by Dr. Anushka Patil, Head of the First Year Engineering Department .Guest introduction done by Mr. Sarjerao Narwade

Chief guest under the said program Hon. Mrs. Archana Mule madam explained to the students how to study and live stress free life and how to increase concentration by suggesting easy tricky and day-to-day practices such as breathing deeply, start studying after breathing for three minutes every morning and evening, and convince them it will help them to increase concentration in studies. The importance of self-confidence and how necessary it is. Students should plan their goals, identify their own capabilities and plan their time to make their dreams come true. At the same time, increased use of mobile phones should be restricted she added.

The program was coordinated by Dr. Anushka Patil, Head of the First Year Engineering Department and Mr. Sarjerao Narwade Student Pranjali Nemate anchored the event and vote of thanks offered Mrs. Ashwini Lad

Lectures and Workshops of Eminent People

Lectures and Workshops of Eminent People

Resource Person :Mr. AjayKumar Deshmukh
Date: 25th August 2023 at 10:00 AM
Venue: Auditorium, PVPIT, Budhgaon

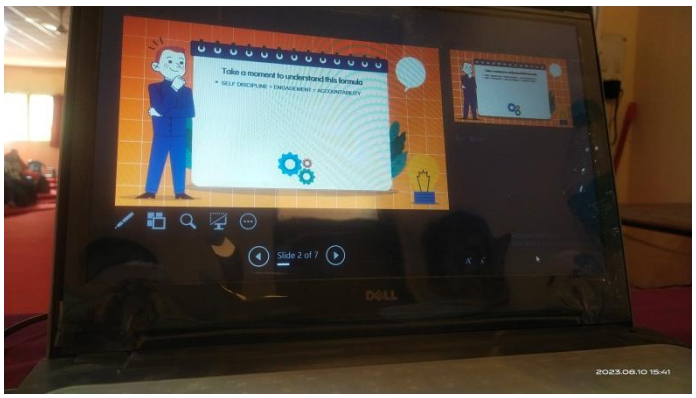
On 25th August.2023 in the expert talk series under Student Induction Program and eminent guests Mr. Ajaykumar Deshmukh was invited. The function began with the felicitation of guests by Dr. Anushka Patil, Head of the First Year Engineering Department . The guest introduction done by Mr S E Narwade.

At the outset Mr. Ajay Kumar Deshmukh Sir told students to stand and clap for all those who participated in Chandrayaan-3 mission. In his lecture, he gave valuable advice to the students to become entrepreneurs. Advised to be a job developer not an employee. While saying this, he told the students what they need to study to become an entrepreneur. He told how to start a business. He asked the students to focus on soft skill development which includes improving communication skills, engagement in work, organizational skills, problem solving ability, leadership qualities. He said, "Be successful in life, not with the sense of money, but with the sense of increasing self-respect." At the same time, he convinced the students of the importance of industrial connectivity, focus on additional languages, introduction to artificial intelligence.

The program was coordinated by Dr. Anushka Patil, Head of the First Year Engineering Department and Ms. Ashwini Lad anchored the event and vote of thanks offered Amit Kumar Chavan

Lectures and Workshops of Eminent People

Extra- Curricular Activities-Team build up activities



Extra- Curricular Activities- Creative Arts and Culture




Extra- Curricular Activities-Drawing

POST OFFICE ACCOUNT REGISTRATION CAMPAIGN

Physical Activity-Yoga and Exercise




STUDENT FEEDBACK




"I am very thankful to our Institution for conducting Student Induction Program. I am happy being a part of this program. There are many doubt about Student Induction Program as I was new , confused and uncertain about the environment but this program I am a friend of many and most importantly learn to live a happy Life" ..... Aditya Kale (CSE)

" I believed earlier how I will cope up with in to another field that I chosen engineering career but within Student Induction Program all of doubts are cleared. The teachers are very good and friendly helped me in many ways giving us a new outlook to see the would around us and the challenges and opportunities in upcoming future " ..... Abhijit Kharat (E and TC)

"Student Induction Program is full of many learning experiences where we learnt many things and improve our knowledge and identify our real happiness living a happy life and allow others to live happily" ..... Shrutika Vibhute (ECS)

" It was really nice experience as being a part of Student Induction Program where we did many curricular and extra curricular activities, listened great things from eminent guests to get proper direction to be successful in our future " ..... Rudrabalaji Sutrave (Civil)

"Student Induction Program is a perfect package full of guest lectures, modules and different activities to build better perceptions and to tackle many barriers in our engineering careers and living a healthy and happy life."..... Aniket Kadam (Mechanical)

Schedule of the Student Induction Program

Day & Date	Session I 6.30-7.30 am (Daily)	Session II 10.00 am-12.00 pm	Session III 12.30-2.30 pm	Session IV 2.45 -4.45 pm	Extra activities 4.45 p m onwards
Day 1, Tuesday 8 Aug,2023		**Inaugural Function** Guest Session Mrs. Leeana Sane Topic: Grooming Oneself	Departmental Orientation Programme in the respective Department **(Branch wise)**	Interaction with all the staff members in the respective Dept. **(Branch wise)** **Pre Feedback on UHV**	Day 1, Tuesday 8 Aug,2023
Day 2, Wednesday 9 Aug,2023	Yoga, Physical Health and Related Activities **(Common to All)**	**Guest Session** **Mr. Bhosale** **Topic : Soft Skills and Personality Development**	Universal Human Values I (UHV- I) **Chapter I** *Aspirations and Family Expectations* **(Batch wise)**	One Minute speaking, listening ,reading and writing in English/Test in English Through Google Form**(Batch wise)**	Literary activity
Day 3, Thursday 10 Aug,2023	Yoga, Physical Health and Related Activities **(Common to All)**	**Guest Session** **Mr. G. George and Mr. Shende** **Topic : Career Development**	Universal Human Values I (UHV- I) **Chapter II** *Purpose of the UHV Course* **(Batch wise)**	Speech making on the given current topics / SKIT / Ad making / **(Batch wise)**	Literary activity
Day 4, Friday 11 Aug,2023	Yoga, Physical Health and Related Activities **(Common to All)**	**Guest Session** **Mr. Bhosale** **Topic : Written Communication**	Universal Human Values I (UHV- I) **Chapter III** *Gratitude* **(Batch wise)**	**Theme based poster making / Craft Workshop /Tests in Engineering Mathematics Through Google Form** **(Batch wise)**	Literary activity
Day 5, Saturday 12 Aug,2023	Yoga, Physical Health and Related Activities **(Common to All)**	**Guest Session** **Mr. Ruturaj Hajare** **Topic: Vedic Mathematics**	Universal Human Values I (UHV- I) **Chapter IV** *Competition & Cooperation* **(Batch wise)**	/Painting / Drawing on different social issues **(Batch wise)**	Creative Practices

Schedule of the Student Induction Program

Day & Date	Session I 6.30-7.30 am (Daily)	Session II 10.00 am-12.00 pm	Session III 12.30-2.30 pm	Session IV 2.45 -4.45 pm	Extra activities 4.45 p m onwards
Day 6, Monday 14 Aug,2023	Yoga, Physical Health and Related Activities **(Common to All)**	**Guest Session**	Universal Human Values I (UHV- I) **Chapter V** *Competition & Excellence* **(Batch wise)**	Topic : Drawing Skills	Creative Practices
Day 7, Thursday 17 Aug,2023	Yoga, Physical Health and Related Activities **(Common to All)**	**Guest Session**	Universal Human Values I (UHV- I) **Chapter VI** *Self & Body* **(Batch wise)**	Project : Best out of waste / Essay / Article / Story /Poetry Writing **(Batch wise)**	Creative Practices
Day 8, Friday 18 Aug,2023	Yoga, Physical Health and Related Activities **(Common to All)**	**Guest Session** **Dr. Deelip Patwardhan** **Topic : Universal Human Values (UHV)**	Universal Human Values I (UHV- I) **Chapter VII** *Peer Pressure* **(Batch wise)**	**Guest Session** **Mr. Bhaskar Sadakale** **Topic : Buvabaji and Science**	Extracurricular Activities
Day 9, Monday 21 Aug,2023	Yoga, Physical Health and Related Activities **(Common to All)**	**Guest Session** **Dr. Pramod Patil** **Topic: Technology in 21st Century and Human Values**	Universal Human Values I (UHV- I) **Chapter VIII** *Self – Confidence* **(Batch wise)**	Indian Vocal & Classical Music : Singing/ Video/ Short film making with social message Dancing/ **(Batch wise)**	Extracurricular Activities
Day 10, Tuesday 22 Aug,2023	Yoga, Physical Health and Related Activities **(Common to All)**	**Guest Session** **Dr. Anil Madke** **Topic : Health is Wealth**	Universal Human Values I (UHV- I) **Chapter IX** *Peer Pressure & English* **(Batch wise)**	**Valedictory Function** providing the guidelines for the classes etc.…and feedback collection **(Common to All)**	Day 10, Tuesday 22 Aug,2023

Mr.Amit Kumar Chavan
Report Preparation

Mr.Sarjerao Narwade
Coordinator

Dr. Anushka A Patil
Chief Coordinator,HoD

Dr. Dinkar A Ghewade
PRINCIPAL