



Biogas plant at VFSTR

22CT201 ENVIRONMENTAL STUDIES

Hours Per Week:

L	Т	Р	С
1	1	0	1

PREREQUISITE KNOWLEDGE: General awareness regarding environmental problems and importance of environmental protection.

COURSE DESCRIPTION AND OBJECTIVES:

It is a multidisciplinary subject where different aspects of society and environment are dealt using a holistic approach. It is evolving to be the education for sustainable and ethical development both at a local and global level. It helps to prepare the next generation for planning appropriate strategies to address environmental issues. It identifies and creates solutions that conserve to manage ecosystem and biodiversity and helps to eliminate pollutants, toxicants, preserve air, water and soil quality. Environmental education recognizes impacts of global issues, enhances the public awareness and helps to take decisions towards environmentally responsible actions.

MODULE-1

UNIT-1 4L+4T+0P=8 Hours

NATURAL RESOURCES, ECOSYSTEMS AND BIODIVERSITY

Environment and sustainable development, Natural resources-forest, water, energy and land resources; Ecosystem-basic structural components, function and interactions in ecosystem, ecological succession.

UNIT-2 4L+4T+0P=8 Hours

BIODIVERSITY AND CONSERVATION

Introduction to biodiversity, types of biodiversity - species, genetic and ecosystem diversity, Threats to biodiversity - natural and anthropogenic, species extinctions, man wildlife conflicts, Biodiversity conservation - principles and strategies, in-situ and ex-situ conservation.

PRACTICES:

- Visit to a Biogas plant, Solar Power plant.
- Visit to a local area: river/pond/lake/forest / grassland / hill /mountain and study of different.
- types of ecosystems, biodiversity study and documentation (herbarium sheet preparation).
- Set up an aquarium.
- Case study: Renewable energy use.

MODULE-2

UNIT-1 4L+4T+0P=8 Hours

ENVIRONMENTAL POLLUTION AND CLIMATE CHANGE

Air, water, soil, radioactive and noise pollution, Study of different pollutants (SOx, NOx, PAN, PAH etc.); Toxicity study, Climate change - greenhouse effect, acid rain, ozone layer depletion.

VFSTR 86 UNIT-2 4L+4T+0P=8 Hours

POLLUTION CONTROL DEVICES AND WASTEWATER TREATMENT TECHNOLOGIES

Air pollution control devices - Gravitational settling chambers, cyclonic separators, electrostatic precipitators, fabric filters and bio filters, Wastewater management.

PRACTICES:

- Visit to a sewage treatment plant and wastewater analysis.
- Case study: Recycling Technologies.
- Case study: Effects of contaminants on microorganisms.
- Report writing: 12 principles of green chemistry for environmental sustainability.
- Report writing: Environmental Impact Analysis, Local Disaster Management Plan.

COURSE OUTCOMES:

Upon successful completion of this course, students will have the ability to:

CO No.	Course Outcomes	Blooms Level	Module No.	Mapping with POs
1	Apply the basic concepts of sustainable development, natural resource utilization and ecology for the purpose of environmental protection.	Apply	1	1,6,7, 9, 10, 11, 12
2	Design remediation technologies for their abatement.	Apply	2	1, 3,6,7, 9, 10, 11, 12
3	Analyze the biodiversity of different ecosystems and formulate various conservation approaches	Analyze	1	1, 7, 8, 9, 10, 11, 12
4	Analyze the presence of various environmental pollutants.	Analyze	2	1, 6,7,9, 10, 11, 12
5	Recommend various waste management approaches and their implementation strategies.	Evaluate	2	1,2, 7,8,9,10,11, 12

TEXT BOOKS:

- 1. A. Kaushik and C. P. Kaushik, "Perspectives in Environmental Studies", New Age International Publishers, 5th Edition, 2016.
- 2. Y. Anjaneyulu, "Introduction to Environmental Science", 1st edition, B. S. Publications, 2015.

REFERENCE BOOKS:

- 1. B. Joseph, "Environmental Studies", Mc Graw Hill Education, 2nd Edition, 2015.
- 2. S. Subash Chandra, "Environmental Science", 1st eidition New Central Book Agency, 2011.
- 3. M.Basuand S.Xavier, "Fundamentals of Environmental Studies", 2nd edition Cambridge University Press, 2016.

SKILLS:

- ✓ Create a biodiversity map of any habitat/ ecosystem.
- ✓ Strategize different ways of using renewable energy resources.
- ✓ Design novel strategies and approaches for pollution control and waste management.

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22SA102 - ORIENTATION SESSION

L	Т	P	C
1	-	4	3

PREREQUISITE KNOWLEDGE: ----

COURSE DESCRIPTION AND OBJECTIVES:

This course provides an insight into the overall development of an individual. This course provides guidance for a student who is transforming from fully monitored parental care to a total freedom at this turning point of age. The orientation session provides a great beginning to the fresher to gain self-directing capabilities. In the orientation the fresher is being encouraged to explore and discover what is the right path for himself/herself.

MODULE-I

UNIT-I 4 L-0T-16 P 20 Hrs

KNOW YOUR COUNTRY:

Struggles behind Indian freedom, India @ 75, Fundamental human rights and responsibilities of Indian citizen

UNIT-II 4 L-0T-16 P 20Hrs

LIFE SKILLS:

Personality development through Interpersonal & Communication skills, Decision making & problem solving, Importance of Co & Extracurricular participation

PRACTICES:

- 1. Elocution.
- 2. Essay writing.
- 3. Reports on day to day sessions.

MODULE-II

UNIT- I 5 L-0T-20 P 25 Hrs

UNIVERSAL HUMAN VALUES:

Importance of human values, Gender Sensitization, Aspirations and concerns, Self-management, Health-Understanding, Programs, Relationship-Foundation, Respect

UNIT- II 3 L-0T-12P 15Hrs

SOCIAL CONSCIOUSNESS:

Importance of farming, Usage of technology and dealing the cyber crimes, Addiction disorder

PRACTICES:

- 1. Activity of UHV.
- 2. Activity of UHV
- 3. Activity of UHV
- 4. Activity of UHV
- 5. Activity of UHV

SKILLS:

- Know the struggle behind India's independence.
- Know the fundamental rights.
- Able to effectively present any topic.
- Assess the stress level and management of stress.
- Able to manage anger.

COURSE OUTCOMES:

Upon successful completion of this course, students will have to ability to:

CO No.	Course Outcomes	Blooms Level	Module No.	Mapping with POs
1	Understand the sacrifice by which got the freedom	Undestand	1	1,2,6,9
2	Able to effectively communicate and express their views	Apply	1	1,2,9,12
3	Able to understand the aspirations and their fulfillment.	Apply	2	1,2,3,9,12
4	Able to de-addict themseleves from any addiction.	Apply	2	1,2,9,12
5	Assessment and management of stress.	Evaluate	2	1,2,3,9,12

ORIENTATION COURSE @ VFSTR

VFSTR proposed to start orientation course as a 3 credit course. The purpose of orientation course is to create awareness on various issues that are essential for any individual.

Orientation course will be conducted for students of all programs. The entire strength will be divided into batches and will be participating in the lecture sessions and activities planned according to the themes specified below. A series of topics and issues will be discussed in each theme along with group/individual activities.

The details of the themes and topics covered under them are as follows:

S.No	Theme	Topics
1	Life Skills	Personality development through Interpersonal &
		Communication skills
		Decision making & problem solving
		Importance of Co & Extracurricular participation
2	Know your country	Struggles behind Indian freedom
		• India @ 75
		Fundamental human rights
3	Social Consciousness	Importance of farming
		Usage of technology and dealing the cyber crimes
		Visit to orphanages/old age homes/ adopted
		villages
4	Universal Human Values	Importance of human values
		Gender Sensitization
		Aspirations and concerns
		Self-management
		Health-Understanding, Programs
		Relationship- Foundation, Respect

Individual and Group activities will be planned specific to each theme. Award of credit can be done after the submission of report by the students.



OFFICE OF DEAN STUDENT AFFAIRS

ORIENTATION PROGRAM 2022-23-BATCH 1

		Batch -1 (Sangamam Seminar Hall)						
Date	8.00 AM- 10.00 AM	10.15 AM-11.15 PM	11.15 AM-12.00 PM	01.00 PM- 2.30 PM	02.45 PM-04.00 PM			
11-08-2022		Inauguration of the Orientation program						
12-08-2022	Batches division & nteraction with mentors	Screening of Uri movie		Interaction with alumni Mr I Sreenivasulu	Competition Elocution/Essay writing			
13-08-2022	nteraction with mentors	Indian Independence Shri V V Lakshminarayana, Retd ADGP		India's struggle for independence Cmde Dr M S Raghunathan, Registrar	Competition Quiz			
14-08-2022	Interaction with mentors	Fundamental rights and Dr Praveen Kumar,	•	Final round of	competitions			
15-08-2022			Independence Day Celel	orations				
16-08-2022	Interaction with mentors	Awareness on scholarship and bank loans Office of SA	Physical fitness Office of SA	Goal setting and life style Dr L Rathaiah	Building the linked in profile Mr Ravi Teja			
17-08-2022	nteraction with mentors	Emotional and psychological aspects Dr L Rathaiah	NPTEL, Minors and Honors Dr Sk Jakeer	Counselling @Vignan Ms Shabana Azmi	Vignan Theme Song Rehearsal			
18-08-2022	Interaction with mentors	Orientation about Cambridge Certification exams	Career enhancement schemes Mr D Vijay Krishna	Organic farming Dr T Ramesh Babu	Utti Utsav			
19-08-2022			Holiday for Krishnash	itami				
	8.00 AM- 9.00 AM	9.15 AM-11.15 PM	11.15 AM-12.30 PM	01.30 PM- 2.30 PM	02.45 PM-04.00 PM			
20-08-2022	nteraction with mentors	Gender sensitization Dr. K. Rani Rajitha Madhuri	Interaction with alumni	Special minors, add on courses	Physical fitness Office of SA			
21-08-2022		Excursion tour to Kon	<mark>ıdaveedu fort / Kondapalli fo</mark>	rt/ Undavalli caves and Amravathi				



OFFICE OF DEAN STUDENT AFFAIRS

ORIENTATION PROGRAM 2022-23-BATCH 2

		Batch -2 (Spoorthi Seminar Hall)					
Date	8.00 AM- 10.00 AM	10.15 AM-11.15 PM	11.15 AM-12.00 PM	01.00 PM- 2.30 PM	02.45 PM-04.00 PM		
11-08-2022			Inauguration of the Orientat	ion program			
12-08-2022	Batches division & Interaction with mentors	Screening of U	Screening of Uri movie		Competition Elocution/Essay writing		
13-08-2022	Interaction with mentors	Indian Independence Shri V V Lakshminarayana, Retd ADGP		India's struggle for independence Cmde Dr M S Raghunathan, Registrar	Competition Quiz		
14-08-2022	Interaction with mentors	Fundamental rights and Dr Praveen Kumar,	-	Final round	of competitions		
15-08-2022		Independence Day Celebrations					
16-08-2022	Interaction with mentors	Building the linked in profile Mr Ravi Teja/Mr Satya	Interaction with student teams ARC, Sports Contingent Mr M Lokesh	Goal setting and life style Dr L Rathaiah	Interaction with alumni Mr Praveen Gurram		
17-08-2022	Interaction with mentors	Emotional and psychological aspects Dr L Rathaiah	Counselling @Vignan Ms Shabana Azmi	NPTEL, Minors and Honors Dr Sk Jakeer	Physical fitness Office of SA		
18-08-2022	Interaction with mentors	Orientation about Cambridge Certification exams	Organic farming Dr T Ramesh Babu	Interaction with alumni	Utti Utsav		
19-08-2022			Holiday for Krishnasht	ami			
	8.00 AM- 9.00 AM	9.15 AM-11.15 PM	11.15 AM-12.30 PM	01.30 PM- 2.30 PM	02.45 PM-04.00 PM		
20-08-2022	Interaction with mentors	Gender sensitization Dr. K. Rani Rajitha Madhuri	Interaction with alumni	Special minors, add on courses	Career enhancement schemes Mr D Vijay Krishna		
21-08-2022		Excursion tour to Ko	ondaveedu fort / Kondapalli for	rt/ Undavalli caves and Amravathi			



ORIENTATION PROGRAM 2022-23 (22nd-27th Aug 2022-Batch 1)

OFFICE OF DEAN STUDENT AFFAIRS

Date			Batch -1 (Sangamam Semina	r Hall)		
	8-9.15 AM	9.15-10.45 AM	11-12.00 PM	1-2.30 PM	2.45-4.00 PM	
22-08-2022	Interaction with mentors	Exploring our basic aspirations and their fulfillment Prof. Hari Kumar, NITW	Activity on UHV	R22 Regulation-Inaugural	R22 Regulation	
	8-9.30 AM	9.30-10.45 AM	11-12.30 PM	1.15-2.30 PM	2.45-4.00 PM	
23-08-2022	Interaction with mentors	Understanding our needs-Aspirations, concerns at individual level Prof. Karthik, NITW	Health Dr. Sunder Raj	R22 Regulation	R22 Regulation-Valedictory	
24.00.000	8-9.30 AM	9.30-10.45 AM	11-12.00 PM	1.00-2.30 PM	2.45-4.00 PM	
24-08-2022	Interaction with mentors	Relationship-Trust and respect Prof. Bhavani	Activity on UHV	Interaction with student teams SAC, UEAC, NCC	Addiction disorder K Annapurna, DSP	
	8-9.30 AM	9.30-10.30 AM	10.45-12.00 PM	1.00-2.30 PM	2.45-4.00 PM	
25-08-2022	Interaction with mentors	Relationship-Reverence for excellence, gratitude Prof. Swamy	Activity on UHV	PAB(Pick a Book) Dr A Sharada	Importance of Yoga and yoga sessions Office of SA	
	8-9.30 AM	9.30-10.45 AM	11-12.00 PM	1.00-2.30 PM	2.45-4.00 PM	
26-08-2022	Interaction with mentors	Society & Nature Personal sharing Mr. Suman	Stress assessment and management Ms Shabana Azmi	Sum up Dr. Sumati	Physical fitness Office of SA	
		8.00 – 12.00 PM			1.00-4.00 PM	
27-08-2022	Interact	Interaction with mentors for submission of all assignments			entation camp AAVEG	



ORIENTATION PROGRAM 2022-23 (22nd-27th Aug 2022-Batch 2)

OFFICE OF DEAN STUDENT AFFAIRS

Date		В	atch -2 (Spoorthi Sen	ninar H	all)	
	8-9.15 AM	9.15-10.45 AM	11-12.00 PM		1-2.30 PM	2.45-4.00 PM
22-08-2022	Interaction with mentors	Exploring our basic aspirations and their fulfillment Prof. Hari Kumar, NITW	Activity on UHV	Inte	raction with student teams SAC, UEAC, NCC	Interaction with student teams SAC, UEAC, NCC
	8-9.30 AM	9.30-10.45 AM	11-12.30 PM		1.15-2.30 PM	2.45-4.00 PM
23-08-2022	Interaction with mentors	Understanding our needs-Aspirations, concerns at individual level Prof. Karthik, NITW	Health Dr. Sunder Raj	Stress	assessment and management Ms Shabana Azmi	Vignan Theme Song Rehearsal
	8-9.30 AM	9.30-10.45 AM	11-12.00 PM		1.00-2.30 PM	2.45-4.00 PM
24-08-2022	Interaction with mentors	Relationship-Trust and respect Prof. Bhavani	Activity on UHV		raction with student teams ports contingent, e cell	Addiction disorder
	8-9.30 AM	9.30-10.30 AM	10.45-12.00 PM		1.00-2.30 PM	2.45-4.00 PM
25-08-2022	Interaction with mentors	Relationship-Reverence for excellence, gratitude Prof. Swamy	PAB(Pick a Book) Dr A Sharada		R22 RegulationInaugural	R22 Regulation
	8-9.30 AM	9.30-10.45 AM	11-1.00 PM		1.45-2.30 PM	2.45-4.00 PM
26-08-2022	Interaction with mentors	Society & Nature Personal sharing Mr. Suman	Sum up Dr. Sumati		R22 Regulation	R22 Regulation-Valedictory
		8.00 – 12.00 PM			1.00-4.00 PM	
27-08-2022	Interaction with mentors for submission of all assignments				Valedictory of or	entation camp AAVEG



OFFICE OF DEAN STUDENT AFFAIRS

ORIENTATION PROGRAM 2022-23 SCHEDULE FOR 25TH AND 26TH AUG 2022

Date	Batch -1 (Spoorthi Seminar Hall)				
	8-9.30 AM	9.30-10.30 AM	10.45-12.00 PM	1.00-2.30 PM	2.45-4.00 PM
25-08-2022	Interaction with mentors	, 6	Interaction with student teams SAC and Civil Services	PAB(Pick a Book) Dr A Sharada	Interaction with alumni of ECE Department
	8-9.30 AM	9.30-10.45 AM	11-12.00 PM	1.00-2.30 PM	2.45-4.00 PM
26-08-2022	Interaction with mentors	Society & Nature Personal sharing Mr. Suman	Stress assessment and management Ms Shabana Azmi	Interaction with student teams Sports contingent and e cell	Sum up Dr. Sumati

Date	Batch -2 (Sangamam Seminar Hall)				
	8-9.30 AM	9.30-10.30 AM	10.45-12.00 PM	1.00-2.30 PM	2.45-4.00 PM
25-08-2022	Interaction with mentors	Relationship-Reverence for excellence, gratitude Prof. Swamy	PAB(Pick a Book) Dr A Sharada	R22 RegulationInaugural	R22 Regulation
	8-9.30 AM	9.30-10.45 AM	11-12.45 PM	1.45-2.30 PM	2.45-4.00 PM
26-08-2022	Interaction with mentors	Society & Nature Personal sharing Mr. Suman	Sum up Dr. Sumati	R22 Regulation	R22 Regulation-Valedictory

22TP101 CONSTITUTION OF INDIA

Hours Per Week:

L	Т	Р	С
0	2	0	1

PREREQUISITE KNOWLEDGE:

High School-level Civics and Social Studies.

COURSE DESCRIPTION AND OBJECTIVES:

To provide students with a basic understanding of Indian Polity and Constitution and make students understand the functioning of government at the center and state level besides local self-government. This course also equips students with knowledge pertaining to fundamental rights and fundamental duties of a citizen in a democracy such as India.

MODULE-1

UNIT-1 0L+8T+0P=8 H

HISTORICAL BACKGROUND TO THE INDIAN CONSTITUTION

Meaning of the constitution law and constitutionalism, Historical perspective of the Constitution of India, Salient features and characteristics of the Constitution of India.

UNIT-2 0L+8T+0P=8 H

FUNDAMENTAL RIGHTS, DUTIES, DIRECTIVE PRINCIPLES, AND AMENDMENT

Scheme of the fundamental rights - scheme of the Fundamental Right to Equality, scheme of the Fundamental Right to certain Freedom under Article 19, scope of the Right to Life and Personal Liberty under Article 21, Scheme of the Fundamental Duties and its legal status, Directive Principles of State Policy – its importance and implementation, Amendment of the Constitution - Powers and Procedure.

PRACTICES:

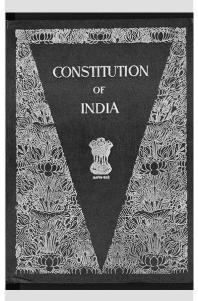
- Enactment of Constituent Assembly debates to further understand the rationale for the provisions
 of the constitution.
- Fundamental Rights in our popular culture discussion in the movie Jai Bhim.

MODULE-2

UNIT-1 0L+8T+0P=8 H

STRUCTURE AND FORM OF GOVERNMENT

Federal structure and distribution of legislative and financial powers between the Union and the States; Parliamentary Form of Government in India – The constitution powers and status of the President of India; Emergency Provisions: National Emergency, President Rule, Financial Emergency.



Source: https://commons. wikimedia.org/wiki/ File:Constitution_india.jpg

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SKILLS:

- ✓ Understanding the basics of the Indian constitution.
- ✓ Know the fundamental rights, fundamental duties, and Directive Principles of State Policy.
- ✓ Fair knowledge about the functioning of various institutions in a democracy.

UNIT-2 0L+8T+0P=8 H

LOCAL SELF GOVERNMENT

Local Self Government - Constitutional Scheme in India - 73rd and 74th Amendments.

PRACTICES:

- Debate on federalism in India.
- Collect news published in the local papers about panchayats in the nearby areas.

COURSE OUTCOMES:

Upon successful completion of this course, students will have the ability to:

CO No.	Course Outcomes	Blooms Level	Module No.	Mapping with POs
1	Analyse major articles and provisions of the Indian constitution.	Analyze	1	6
2	Appreciation for the constitution and safeguarding individual rights.	Apply	1	6
3	Evaluating functions of various organs of the State in a democracy.	Evaluate	2	6

TEXTBOOKS:

1. PM Bhakshi, "Constitution of India", 15th edition, Universal Law Publishing, 2018.

REFERENCE BOOKS:

- 1. B. R. Ambedkar, "The Constitution of India" 2020 edition, Educreation Publishing, India, 2020.
- 2. Subhash Kashyap, "Our Constitution" 2nd edition, National Book Trust, India, 2011.
- 3. Arun K. Thiruvengadam, "The Constitution of India: A Contextual Analysis", Hart Publishing India, 2017.

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22SS907 - MAKING OF THE MAHATMA

Hours per week:

L	T	P	С
2	2	2	4

PREREQUISITE KNOWLEDGE: High School level understanding of Social Studies and Indian Freedom Movement.

COURSE DESCRIPTION AND OBJECTIVES:

This course introduces Mohandas Karamchand Gandhi, who is often referred to as the Mahatma (great soul). His life is traced from early years through maturation into a leader, who is eventually seen as the father of the nation. This course also looks at various ideas that shaped his perspective that was the driving force of his leadership.

MODULE-1

UNIT-1 8L+8T+8P=24 Hours

INTRODUCING GANDHI AND HIS EARLY LIFE

Gandhi and his relevance – a general introduction; Early years – family background, early education, and study in England; Ideas that shaped Gandhi - Indian influences (religious and cultural), Western influences (various scholars and ideologies – viz., Tolstoy, Thoreau and Transcendentalism)

UNIT-2 8L+8T+8P=24 Hours

GANDHI IN SOUTH AFRICA

Confronting racial discrimination; Beginnings of activism; Honing of passive resistance and Satyagraha; Gandhi's impact on South Africa (especially on the future leaders such as Nelson Mandela)

PRACTICES:

• Exercises to understand racism in its various forms.

MODULE-2

UNIT-1 8L+8T+8P=24 Hours

GANDHI'S RETURN TO INDIA AND RATTLING AN EMPIRE

Joining of Indian National Congress and earlier involvement in movements of resistance such as Champaran, Kheda, Labour Strike in Ahmedabad, Rowlatt Act, Khilafat movement, Non-Cooperation Movement, Salt Satyagraha, Civil Disobedience Movement

UNIT-2 8L+8T+8P=24 Hours

PATH TO FREEDOM

Gandhi's surging popularity among masses; Round table conferences, Communal Award and Poona Pact, Quit India Movement, Partition of India, Communalism, and the end of an era,

PRACTICES:

• Creating a photo journal of key moments in freedom struggle.

SKILLS:

- Basic appreciation for the life and journey of the Mahatma.
- > Understand the dynamic between radical/transformative ideas and their impact on tangible/oppressive reality.
- > Critical appreciation of Indian struggle for freedom, especially for the role played by Gandhi.
- > Ability to clearly articulate ideas in writing as well as orally on pertinent topics in this course.

TEXTBOOKS:

1. Bhikhu Parekh, "Gandhi: A Very Short Introduction", OUP, 2001.

REFERENCE BOOKS:

- 1. Mahatma Gandhi, "The Story of My Experiments with Truth".
- 2. Ramachandra Guha, "Gandhi: The Years That Changed the World", Penguin Allen Lane, 2018.
- 3. Collected Works of Mahatma Gandhi.

22SS908 - GANDHIAN PHILOSOPHY

Hours per week:

L	T	P	С
2	2	2	4

PREREQUISITE KNOWLEDGE: High School level understanding of Social Studies and Indian Freedom Movement.

COURSE DESCRIPTION AND OBJECTIVES:

This course explores various philosophical ideas that have influenced and shaped the out of Mahatma Gandhi. These ideas and schools of thought comprise of both Indian as well as Western origins. This course not only traces the sources of Gandhi's philosophical inspirations but also establishes the resultant amalgamative zeitgeist, which is uniquely a Gandhian philosophy.

MODULE-1

UNIT-1 8L+8T+8P=24 Hours

SOURCES OF GANDHIAN PHILOSOPHY

Indic Religions: Hinduism, Jainism and Buddhism; Semitic Religions: Christianity, Islam and Judaism; Western Philosophy (Greek Tradition, Ruskin, Tolstoy, Thoreau); Eastern Philosophy

(Vedanta, Bhakti Movement – Kabir, Tulsidas, Vaishnavism, Anasakti Yoga)

UNIT-2 8L+8T+8P=24 Hours

GANDHI'S WORLDVIEW

Gandhi's Views on Human Nature; Gandhi's Views on Truth; Gandhi's Views on Non-Violence; Gandhi's Views on Religion

PRACTICES:

• Research comparing American philosophy of transcendentalism and Indian asceticism

MODULE-2

UNIT-1 8L+8T+8P=24 Hours

GANDHI ON CIVILISATION

Gandhi's Critique of Modern Civilisation; Critical Understanding of Indian Civilisation; Towards a New Civilisation; Sarvodaya

UNIT-2 8L+8T+8P=24 Hours

GANDHIAN WAYS AND MEANS

Duties – social service, duty of disobedience; Swaraj – Swaraj as self-control, swaraj as self-rule; Swadeshi – self-reliance, swadeshi as an economic philosophy, village economy, Swadeshi Movement and Khadi, Swadeshi as a religious idea; Satyagraha – concept of Satyagraha, contrasting Satyagraha and Passive Resistance, discipline of Satyagraha

PRACTICES:

• Exploring the relevance of Swadeshi in the context of todays globalized world.

SKILLS:

- > Understanding Gandhi's thoughts about the human nature
- > Gandhi's quest for perfectibility.
- > Appreciating Gandhi's views on civilization
- > Understanding his vision for a Swadeshi self-reliance

TEXTBOOKS:

1. M. P. Mathai, "Mahatma Gandhi's World View", Gandhi Peace Foundation, 2000.

REFERENCE BOOKS:

- 1. Mahatma Gandhi, "The Story of My Experiments with Truth".
- 2. Ramachandra Guha, "Gandhi: The Years That Changed the World", Penguin Allen Lane, 2018.
- 3. C. F. Andrews, "Mahatma Gandhi's Ideas" Routledge, 2018.

22SS909 - GANDHIAN SOCIAL THOUGHT

Hours per week:

L	Т	P	С
2	2	2	4

PREREQUISITE KNOWLEDGE: High School level understanding of Social Studies and Indian Freedom Movement.

COURSE DESCRIPTION AND OBJECTIVES:

This course provides insight into social thought of Mahatma Gandhi on various societal issues. Gandhi's acceptance of certain aspects of social order and social change, along with his rejection of certain other aspects of social order and social change, provides student an opportunity to rethink upon these societal issues. This course focuses on Gandhi's approach towards warding off social ills involving communalism, women, depressed classes, and environment.

MODULE-1

UNIT-1 8L+8T+8P=24 Hours

TRADITION AND MODERNITY

Gandhi's Views on Social Change; Critique of Indian Social Order; Varnashrama Dharma varna system, Gandhi's views on caste; Critique of Modernity

UNIT-2 8L+8T+8P=24 Hours

RELIGIOUS HARMONY

Hindu-Muslim Amity – efforts for communal unity, Khilafat Movement, protection of minority rights; Communalism – historical perspective, Gandhi's solution to communal problems, Swaraj First-Unity Later approach, Partition of India; Reforms in Religions – towards religious pluralism; Truth is God – truth in thought, speech and action.

PRACTICES:

• Curate news stories published within this current/past year about religious intolerance in India – to be discussed and analyzed in class from a Gandhian perspective.

UNIT-1 8L+8T+8P=24 Hours

SOCIAL EMPOWERMENT

Gandhi's Views on Women – women embodying Ahimsa and Satyagraha, women and freedom; Gandhi's Views on Depressed Classes – untouchability, Harijan Sevak Sangh, disagreements between Gandhi and Ambedkar; Gandhi's Views on Children and Youth – education, constructive work; Gandhi's Views on Labour – economic ideals of Gandhi, Trusteeship theory, Bread labour, dignity of labour

UNIT-2 8L+8T+8P=24 Hours

SOCIAL DEVELOPMENT

Gandhi's Views on Health (Vegetarianism, Naturopathy and Prohibition); Gandhi's Views on Education – aim of education, education and personality development, New Education (Nai Talim), education for adults, women, and deprived sections; Gandhi's Views on Language; Gandhi's Views on Nature and Environment – critique of modern civilization, voluntary simple living

PRACTICES:

• Analyze debate between Gandhi and Ambedkar pertaining to oppressed caste.

SKILLS:

- > Understanding the meaning and implications of Modernity and Post-Modernity
- > The Gandhian Critique of Modernity
- > Understanding of varnashrama dharma and Gandhian views
- > Grasp on India's communal problem from a historical point of view
- > Gandhi's views on the communal problem of India
- > Gandhi's opposition to the partition of India
- > Gandhi's views on depressed classes
- > Different responses to Gandhi's attitude towards the Depressed Classes

TEXTBOOKS:

- 1. Savita Singh, "Global Concern with Environmental Crisis and Gandhi's Vision", A. P. H. Publishing Corporation, 1999.
- 2. Pushpa Joshi, "Gandhi on Women", Navajivan Publishing House, 1988.

REFERENCE BOOKS:

- 1. Sheth, Pravin., Theory and Praxis of Environmentalism: Green plus Gandhi, Gujarat Vidyapeeth, 1994.
- 2. Gandhi, Ecology and Environment, Gandhi Centre, Visakhapatnam, 2004.
- 3. Weber, Thomas., Gandhi and Deep Ecology, Journal of Peace Research, Vol. 36, No- 3, May 1999.
- 4. Nagaraj, D.R., 'Self-purification versus Self-respect: On the Roots of the Dalit Movement', in A.Raghuramaraju (ed.), *Debating Gandhi- A Reader*, Oxford University Press, New Delhi, 2006, pp. 359-388.

22SS910 - INFLUENCE OF GANDHI ON NON-VIOLENT MOVEMENTS

Hours per week:

L	T	P	С
2	2	2	4

PREREQUISITE KNOWLEDGE: - High School level understanding of Social Studies and Indian Freedom Movement.

COURSE DESCRIPTION AND OBJECTIVES:

Indian struggle for freedom has catapulted Mahatma Gandhi into limelight as one of the most significant leaders in the world history. This course examines how his ideas on political participation, methods of resistance, and the strategies used to fight injustice have been co-opted by many other non-violent social movements in Indian as well as across the world.

MODULE-1

UNIT-1 8L+8T+8P=24 Hours

INTRODUCTION TO NON-VIOLENT MOVEMENTS

Post-Gandhian Scenario; Leadership and Organisational Patterns; Dynamics, Strategies and Outcomes; Social and Ecological Issues

UNIT-2 8L+8T+8P=24 Hours

RE-ARTICULATION OF SOCIAL MOVEMENTS

Bhoodan Movement; Total Revolution; Prohibition Movements; Farmers' Movements

PRACTICES:

• Create a profile of social movements that are currently underway in India.

MODULE-2

UNIT-1 8L+8T+8P=24 Hours

ENVIRONMENTAL MOVEMENTS

Chipko Movement; Narmada Bachao Andolan/Tehri Dam; Silent Valley; Water Conservation Movement

UNIT-2 8L+8T+8P=24 Hours

GLOBAL NON-VIOLENT MOVEMENTS

Civil Rights Movements in the United States; Green Peace Movements in Europe; Anti-Apartheid Movement in South Africa; Solidarity Movement in Poland

PRACTICES:

• Comparing Civil Rights movement of USA and movements for caste-based upliftment in India.

SKILLS:

- > Understanding Gandhian Agenda for peace movements
- ➤ Gandhian Agenda for peace movements
- > Evaluating key features, strategies and dynamics of nonviolent movements after Gandhi
- Evaluating processes and approaches through which nonviolent movements seek to achieve justice and liberation from oppression
- > Understanding meaning and significance of the concept of civil rights
- > Insights into the role of different communities involved in ensuring rights

TEXTBOOKS:

1. Sethi, J.D, "Gandhian Critique of Western Peace Movements", Chanakya Publications, 1989

REFERENCE BOOKS:

- 1. David Hardiman, "Gandhi in His Times and Ours." Permanent Black, 2003.
- 2. Ramchandra Guha, "India After Gandhi: The History of the World's Largest Democracy." Picador, 2010
- 3. Acharya Vinoba Bhave, "Bhoodan Ganga." Sarva Seva Sangh, 1957-62, in 8 Vols.
- 4. Guha, Ramachandra., Mahatma Gandhi and the Environmental Movement in A. Raghuramaraju (ed), Debating Gandhi- A Reader, Oxford University Press, New Delhi, 2006.
- 5. Paul Murray., Civil Rights Movement: References & Resources, Macmillan Reference, 1993.
- 6. Mandela, Nelson., Long Walk to Freedom, 1995.

22SS911 - GANDHI'S LEGACY IN 21ST CENTURY

Hours per week:

L	T	P	С
2	2	2	4

PREREQUISITE KNOWLEDGE: High School level understanding of Social Studies and Indian Freedom Movement.

COURSE DESCRIPTION AND OBJECTIVES:

Mahatma Gandhi's life and work has left an indelible mark not only in India but on entire humankind. This course captures the impact of Gandhi on various aspects of our world today in 21st century. As the current century is defined by globalization, adequate spotlight is given to the relevance of Gandhian ideas to the contemporary world. Issues such as democracy, multiculturalism, science and technology, etc. are manifested in the form of new challenges that the world is facing today. Legacy and relevance of Gandhi will be showcased in this course.

MODULE-1

UNIT-1 8L+8T+8P=24 Hours

GLOBALISATION

Understanding Globalisation and Its Ramifications-I (Economy and Technological); Understanding Globalisation and Its Ramifications-II (Social, Political and Cultural); Livelihood/Culture/Lifestyle and Environment; Gandhi's Vision of a Global Order

UNIT-2 8L+8T+8P=24 Hours

DEMOCRACY AND STATE

Gandhian Idea of Man; Debates on Nature of State; Problems and Practices of Democracy – types of democracy, problems in putting democracy into action; Gramswaraj Today – role of villages in India and Gandhian model of village development, Gramswaraj's meaning and basic principles

PRACTICES:

• Browsing internet as a source for understanding global culture. Example: browsing a restaurant menu from another country; browsing a university website from a different country, etc.

UNIT-1 8L+8T+8P=24 Hours

DIVERSITIES AND MULTICULTURALISM

Sarva Dharma Samabhava – religious pluralism and secularism, humanism and universalism; Cultural Diversities – India's cultural diversity, inter-faith dialogues, assimilation of cultures, unity in diversity; Social Inclusion – contemporary policy of social inclusion, Gandhian ways of social inclusion, impediments to inclusion; Empowering Women – Gandhi's views on women, against gender-based discrimination, on empowerment of women, Gandhi's legacy for the contemporary women's movement

UNIT-2 8L+8T+8P=24 Hours

CONTEMPORARY CONCERNS

Science and Technology – historical perspective on science and technology in India (ancient, medieval, colonial, post-independence), Gandhian vision of science and technology; Media – Gandhi and media, media in the contemporary world, significance of media ethics; Terrorism – terrorism in India, naxalism, terrorism and human rights Gandhian method to counter terrorism; Human Rights – concept of human rights, Gandhi on human rights and duties

PRACTICES:

 Curate examples of exclusion in various social settings and provide solutions to make those spaces more inclusive.

SKILLS:

- ➤ Understanding the meaning of socio-cultural Globalisation.
- ➤ Understanding the ramifications of the globalisation in socio-cultural and political perspectives.
- > Understanding the salience of Gandhian vision of global order
- > Understanding a village republic
- > Appreciating the basic principles of Gram Swaraj and its relevance today
- > Appreciating Gandhi's Efforts at Enhancing women's Dignity within private and public realms

TEXTBOOKS:

1. Ramchandra Guha, "India After Gandhi: The History of the World's Largest Democracy." Picador, 2010.

REFERENCE BOOKS:

1. Clapham, Andrew, "Human Rights – A Very Short Introduction", Oxford University Press, 2007

- 2. Kishwar, Madhu., "Gandhi on Women", Economic and Political Weekly, vol. XX, no. 40, October 5, 1985.
- 3. Homer, Jack.,(ed), The Gandhi Reader: A Sourcebook of His Life and Writings, Grove Press, New York, 1956
- 4. Kapadia, Sita., "A Tribute to Mahatma Gandhi: His Views on Women and Social Change", Journal of South Asian Women Studies, Vol. 1, No. 1, November, 1995, Asiatica Association, Milano (Italy)
- 5. M.K. Gandhi., Village Swaraj, Navajivan Publishing House, Ahmedabad, reprint 2002.
- 6. Suresh Misra., Gandhian Concept of Indian Village in R.P.Misra, (ed), Gandhian Model of Development and World Peace, Concept Publishing Company, New Delhi, 1989.
- 7. Neera Chandhoke., The Assertion of Civil Society against the State; The Case of the Post Colonial World in People's Rights (ed) Manoranjan Mohanty et al, New Delhi, 1998.

MINOR ON HUMANITIES AND SOCIAL SCIENCES Offered by Department of Training and Placements

Minor in Humanities and Social Sciences benefits students of science and technology as they are introduced to the disciplines of humanities and social sciences. Courses offered, such as "Introduction to Creative Writing", as a part of this minor will enhance writing skills of students as well as their ability to articulate themselves, not only on issues pertaining to society but also in their core areas of specialisation. Students, through the rest of the courses - such as "Introduction to Sociology", "Introduction to Political Economy", History of Political Thought", and "Relevance of Gandhian Thought to 21st Century", - will also be exposed to a knowledge-base that broadens their world-view and provides an added dimension to their understanding of our changing social world. These minor courses serve as a window into the academic milieu of Humanities and Social Sciences.

Course Code	Course Title	L	T	P	C
22TP903	History of Political Thought	3	2	0	4
22TP905	Introduction to Creative Writing	3	2	0	4
22TP907	Introduction to Political Economy	3	2	0	4
22TP908	Introduction to Sociology	3	2	0	4
22TP910	Relevance of Gandhian Thought to 21st Century	3	2	0	4

22TP903-HISTORY OF POLITICAL THOUGHT

Hours per week:

PREREQUISITE KNOWLEDGE: High school level civics and social studies.

L	T	P	С
3	2	0	4

COURSE DESCRIPTION AND OBJECTIVES:

The paper introduces the student to the contemporary socio-economic and Political Traditions of the West and India. It brings the major component of the state and its application in Political Science through the Philosophical discourse of the western and Indian political thinkers. The paper focuses on the concept of state and its evaluation and refinement in the contemporary social condition. It also discusses contemporary society and its application towards the construction of the model of state, and also will certainly enrich our students to feel confident about the traditional values of Indian Nationalism that evolved over a course of time. India carries a long tradition of political thought which is quite distinct from western political thought. The paper aims to make the student familiar with the great tradition of Indian political thought. special care has been taken to make students aware of the concepts developed by the leading political thinker of India. In the current intellectual climate that embraces an interdisciplinary approach, this course brings together diverse fields from the discipline of Political Science - such as Political Thought, Political

MODULE-1

UNIT-1 12L+8T+0P=20 Hours

WESTERN CLASSICAL THINKERS

Plato, Aristotle, Niccolò Machiavelli, Thomas Hobbes, John Locke, Jean-Jacques Rousseau.

UNIT-2 12L+8T+0P=20 Hours

MEDIEVAL THINKERS

Jeremy Bentham, John Stuart Mill, Hegel, Karl Marx, Antonio Francesco Gramsci and Mao Zedong, John Rawls.

PRACTICES:

- Frame a broad outlook to the philosophical dimensions of Political Thinkers- the concept of state and its evaluation & refinement in the contemporary social Condition.
- Discusses the contemporary society and its application towards the construction of the model of state- Italian Renaissance period- The Contractualist political thinkers.
- The contemporary society and its application towards the construction of the model of Indian state.
- Analyse the trends in distributive Justice in the society.

Theory, Indian Thought and Philosophy of the Social Sciences.

- Get a glimpse of the contemporary human nature.
- the evolution of the contemporary western socio-economic political tradition.

UNIT-1 12L+8T+0P=20 Hours

NATURE AND THEMES OF INDIAN POLITICAL THOUGHT

Kautilya, Vivekananda, Tagore and Sri Aurobindo, Gandhiji, Pandita Ramabai & Savitribai Phule.

UNIT-2 12L+8T+0P=20 Hours

THEMES OF INDIAN POLITICAL THOUGHT

Jawaharlal Nehru, Dr. B.R. Ambedkar, Periyar, M.N Roy, Ram Manohar Lohia, J.P. Narayan, M.S. Golwankar, V.D. Savarkar, Deendayal Upadhyaya.

PRACTICES:

• The important philosophical themes of Indian Political thinkers relevant to India.

SKILLS:

- ➤ Understand the basic tenets of Political Thought of Western and Indian Thinkers.
- ➤ Understand the philosophy so as to have better understanding about state and Society.
- > Critically be able to analyse the concepts like State, Society, Justice, Equality, Rights, Government.
- ➤ Understand the socialistic and Hindutva thought and its impact on India.

COURSE OUTCOMES:

Upon successful completion of the course, students will have the ability to:

CO No.	Course Outcomes	Blooms Level	Module No.	Mapping with PO's
1	Analyse the philosophical dimension of Greek thinkers to understand the evolution of the state.	Apply	1	6
2	Gain knowledge of Indian Tradition, value system, and Indian thought from the classical thinkers of India.	Analyse	2	6
3	Analyse the Socialistic and Hindutva Thoughts of thinkers of India.	Analyse	2	6
4	Evaluate the modern structure of the society and state through the philosophical teachings of medieval thinkers.	Evaluate	1	6

TEXTBOOKS:

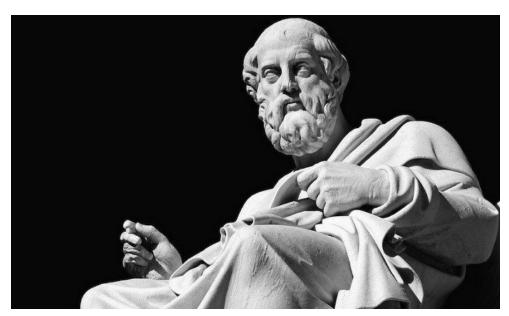
- 1. Shefali Jha, "Western Political Thought", Pearson Publication, New Delhi, 2008.
- 2. O. P. Gauba, "Political Theory", Mayur Paperback, New Delhi, 2009.

REFERENCE BOOKS:

- 1. Rajeev Bhargava, "Political Theory", Pearson Publication, New Delhi, 2008.
- 2. O. P. Gauba, "Indian Political Thought", Mayur Paperback, New Delhi, 2016.
- 3. Himanshu Roy, "Indian Political Thought", Pearson Publication, New Delhi, 2020.
- 4. J.W. Allen, "A History of Political Thought in the Sixteenth Century", Borodino Books, 2018. Karl Poper, "Open Society and Its Enemies", Princeton University Press, 2013.

5. John Plamentaz, "Man and Society", 2nd Edition, Longman, 1992.

 $\begin{array}{ll} \textbf{Image:} & \underline{\text{https://www.theguardian.com/commentisfree/belief/2009/sep/21/plato-dialogues-philosophy} \end{array}$



22TP905-AN INTRODUCTION TO CREATIVE WRITING

Hours per week:

L	Т	P	С
3	2	0	4

PREREQUISITE KNOWLEDGE: Technical English Communication.

COURSE DESCRIPTION AND OBJECTIVES:

This course aims to introduce engineering students to the world of creative writing. Students, in this course are exposed to a wide variety of writing styles to inculcate an appreciation for various writing styles. With the knowledge-base from this course, students can respond to social issues and publish their ideas and opinions in the newspapers and magazines besides articulating their own personal experiences. Moreover, the course focuses on improving the students' vocabulary levels and lucid style in a plethora of paragraphs and essays on various platforms. After successfully completing this course, students will be able to - write error free narratives of personal experiences, travelogues and blogs; write argumentative and persuasive essays with lucidity and clarity within the frame, write newspaper articles to sustain the reader's interest, develop wide spectrum of vocabulary in addition to own style of writing and, discriminate the formal and informal style of writing by following gender sensitivity, neutral variety of English and ethics of journalism.

MODULE-1

UNIT-1 12L+8T+0P=20 Hours WRITING AND STYLE

Writing and its importance; The substance of writing: Content, Form, Structure, Paragraphing; Style: Elements of lucidity and clarity in writing.

UNIT-2 12L+8T+0P=20 Hours

WRITING OF PERSONAL EXPERIENCES

Narrating a personal experience - A travelogue/memoir, Blog format, for the audience on the Internet.

PRACTICES:

- Familiarizing idioms, Phrases; Synonyms and antonyms; figures of speech.
- Style register formal, informal usage; varieties of English; language and gender; disordered languages.
- Playing with words; grammar and word order; tense and time.
- Grammatical differences.
- Writing a personal experience writing about a place visited, writing a blog on a personal experience.

UNIT-1 12L+8T+0P=20 Hours

WRITING FOR MEDIA

A sampling of reports, articles for a paper, editorials; Audience analysis, Building interest, Persuasive/argumentative style – counter arguments, rebuttals; effective ending.

UNIT-2 12L+8T+0P=20 Hours

ASSESSING SOURCES FOR WRITING

Studying and analysing good samples/sources of writing from newspaper and magazines.

PRACTICES:

- Making notes.
- Writing outlines.
- Rough drafts.
- Appreciating a short story.
- Book review.
- Writing an article for a paper (writing in a persuasive/argumentative style, using analogies, sustaining reader's interest).

SKILLS:

- Using different styles in writing.
- > Incorporating functionality and flair in writing.
- > Writing geared towards a specific audience.

COURSE OUTCOMES:

Upon successful completion of the course, students will have the ability to:

CO No.	Course Outcomes	Blooms Level	Module No.	Mapping with PO's
1	Write various layouts of paragraphs and essays.	Apply	1 & 2	9,10,12
2	Analyse, apply and formulate one's own style of writing.	Analyze	1 & 2	2, 9,10,12
3	Formulate various techniques based on the situations to sustain the readers' interest on various platforms.	Analyze	1 & 2	2,8,9,10,12
4	Evaluate various conditions and situations of the society and justify their ideas and opinions by using suitable vocabulary in their writings.		1 & 2	2,8,9,10,12
5	Develop courage to face various examinations conducted by both state and central governments.	Create	1 & 2	2,9,10,12

TEXTBOOKS:

- 1. V. R. Narayanaswami, "Strengthen Your Writing", 3rd Edition, Orient Longman, 2005.
- 2. Lurie G. Kirszner and Stephen R. Mandell, "Patterns for College Writing: A Rhetorical Reader and Guide", 15th Edition, Macmillan Learning, 2021.

REFERENCES:

- 1. Christopher Vogler, "The Writer's Journey: Muthic Structure for Writers", 4th Edition, Michael Wiese Productions, 2020.
- 2. Roy Peter Clark, "Writing Tools: 55 Essential Strategies for Every Writer", Little Brown and Company, 2006.

Image: https://essayscouncil.net/creative-writing/



22TP907-INTRODUCTION TO POLITICAL ECONOMY

Hours per week:

L	T	P	С
3	2	0	4

PREREQUISITE KNOWLEDGE: High school level social studies.

COURSE DESCRIPTION AND OBJECTIVES:

This course introduces the basic understanding of Political Economy. This paper is intended to give a broad outlook on the dimensions of the Political Economy of the West and India besides equipping them with the tools to analyse the state of current scenarios globally.

MODULE-1

UNIT-1 12L+8T+0P=20 Hours

INTRODUCTION TO POLITICAL ECONOMY:

Meaning, History and Development, Characteristics, Modern Applications.

UNIT-2 12L+8T+0P=20 Hours

TYPES AND APPROACHES OF POLITICAL ECONOMY:

Socialism, Laissez-Faire, Communism, Mercantilism, Liberalism. Approaches to Political Economy - Ricardian approach, Marxian Approach, Malthusian Approach, Keynesian Approach.

PRACTICES:

- Seminar on comparing and contrasting different types of political economy.
- A detailed project report on type of political economy present in India.

MODULE-2

UNIT-1 12L+8T+0P=20 Hours WELFARE:

Cardinal Utility, Ordinal Utility, Pareto Efficiency, Growth Inequality, Social welfare maximisation.

UNIT-2 12L+8T+0P=20 Hours

INTERNATIONAL POLITICAL ECONOMY:

Globalisation; International Trade; International Organisations - UN, NATO; International Economic Institutions -WTO, IMF, WB; International Political Scenarios - America, Russia, Europe, China.

PRACTICES:

- Field work on various welfare schemes and the outcomes.
- Look into three other international economies of your choice and make a presentation with respect to contemporary situations.

SKILLS:

- ➤ Understand the basics of Political Economy and evolution global political economy.
- ➤ Understand the challenges in the Political Economy globally.
- Examine various ideas of different economic thinkers of the time period.
- Able to understand the shifts in Indian Economy and transformation in the globally connected economic society.

COURSE OUTCOMES:

Upon successful completion of the course, students will have the ability to:

CO No.	Course Outcomes	Blooms Level	Module No.	Mapping with PO's
1	Analyse the evolution of global Political Economy.	Analyse	1	6
2	Gain the knowledge of economic systems from various thinkers.	Analyse	2	6
3	Evaluate the contemporary scenarios of various state economies.	Evaluate	1	6
4	Examine the shifts in the Indian political economy.	Evaluate	2	6

TEXTBOOKS:

- 1. Vincent Bladen, "An Introduction to Political Economy", Creative Media Partners, 2021.
- 2. Ira Katznelson and Helen V. Milner, "Political Science: The State of the Discipline." W.W. Norton, 2004.

REFERENCE BOOKS:

- 1. John Stuart Mill, "Principles of Political Economy: With Some of their Applications to Social Philosophy", Oxford University Press, 1998.
- 2. Alfred Marshall, "Principles of Economics", Cosimo Classics, 2006.
- 3. Jeffry Frieden and Lisa Martin, "International Political Economy: Global and Domestic Interactions", W. W. Norton, 2003.
- 4. Benjamin J. Cohen, "International Political Economy: An Intellectual History", Princeton University Press, 2008.

Image: https://www.balsillieschool.ca/event/what-is-the-purpose-of-international-political-economy/



22TP908-INTRODUCTION TO SOCIOLOGY

Hours per week:

L	T	P	С
3	2	0	4

PREREQUISITE KNOWLEDGE: Basic understanding of society.

COURSE DESCRIPTION AND OBJECTIVES:

This course is designed as an introduction to the field of sociology. The purpose of this course is to provide an academic background in the sociological paradigms, which are presented to students in broadly two modules. Module I - examines the origins of the discipline of sociology and its significance to our understanding of everyday life by putting forth the basic concepts about our social reality. It also introduces students to sociological perspectives and research methods that are foundational for the discipline. Module II - introduces students to various aspects of inequality from a sociological perspective. It also sets out to evaluate social inequality in terms of caste, social class, gender, and even global inequalities.

MODULE-1

UNIT-1 12L+8T+0P=20 Hours INTRODUCTION TO SOCIOLOGY; THREE REVOLUTIONS; AND BASIC CONCEPTS:

Defining sociology - meaning, scope and its significance; Sociological Imagination; Origins of the discipline of Sociology - Scientific Revolution, Industrial Revolution, and French Revolution; Basic Concepts - individual and society, nature vs. nurture, culture - values and norms, cultural diversity, ethnocentrism, socialization and agents of socialization.

UNIT-2 12L+8T+0P=20 Hours

SOCIOLOGICAL PERSPECTIVES & METHODS:

Sociological Perspectives - Functionalist Perspective, Conflict Perspective, and Symbolic Interactionist Perspective; Research Methods - surveys, experiments, comparative research, historical analysis, ethnography, human subjects and ethical problems in research.

PRACTICES:

- Analysing case studies that highlights various sociological concepts. For instance, while talking about nature v. nurture - controversial case studies of feral girls (wolf children) of Bengal and Genie the Wild Child.
- Practicing research methods such as preparation of questionnaires, conducting of surveys, and participant observation.

MODULE-2

UNIT-1 12L+8T+0P=20 Hours SOCIAL INEQUALITY AND SOCIAL CHANGE

Social Stratification and Change: Marxist, Weberian and functionalist perspectives on stratification; caste system; *jajmani* system; sankritisation; westernisation, secularisation and modernisation; Intersectionality - Class, sex, gender, caste.

GLOBALIZATIONGlobalization and the Changing World: Determinants and Effects of globalization; nation-state, nationality and globalization; globalization and culture; globalization and inequality.

PRACTICES:

- Browsing the internet as a resource for understanding global culture. Example: exploring McDonalds and PizzaHut and other restaurants to understand cultural hegemony.
- Collecting news published in the local papers about cultural traditions and social issues in our society.

SKILLS:

- ➤ Basic understanding of the discipline of sociology.
- ➤ Understand the dynamic between the individual and society.
- ➤ Critically think about societal issues both globally and locally.
- Ability to carry on meaningful and educated conversations about sociology and deploy sociological understanding to explain various issues.
- Ability to clearly articulate ideas in writing as well as orally on various societal issues.

COURSE OUTCOMES:

Upon successful completion of the course, students will have the ability to:

CO No.	CO's	Blooms Level	Module No.	Mapping with PO's
1	Analyse society through the prism of sociology as an academic discipline.	Analyse	1	6
2	Demonstrating the interplay between the individual and society, i.e., how society shapes the development of individuals and how individuals shape society.	Analyse	2	6
3	Analysing human behavior as manifested in various social institutions and societal culture.	Analyse	2	6
4	Evaluate basic theoretical perspectives and methodological orientations in sociology.	Evaluate	1	6
5	Critically evaluating social inequality in its multiple forms and social change.	Evaluate	2	6

TEXTBOOKS:

- 1. M. Haralambos and M. Holborn, "Sociology: Themes and Perspectives", 8th Edition, Harper Collins, 2014.
- 2. Dipankar Gupta, "Social Stratification", Oxford University Press, New Delhi, 2010.

REFERENCE BOOKS:

1. Anthony Giddens, "Sociology", 5th Edition, Polity Press, 2006.

2. M. N. Srinivas, "Social Change in Modern India", Orient Blackswan, New Delhi, 2007.

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22TP910-RELEVANCE OF GANDHIAN THOUGHT TO 21ST CENTURY

Hours per week:

L	T	P	С
3	2	0	4

PREREQUISITE KNOWLEDGE: High school-level history of India and the freedom struggle.

COURSE DESCRIPTION AND OBJECTIVES:

This course is designed as an introduction to Gandhian Thought. The purpose of this course is to provide an academic background in the Gandhian paradigms, which is presented to students in broadly two modules. Module I - examines the historical background of the origins of Gandhian Thought, its influences, and fundamental tenets. Module II - introduces students to his thoughts on social transformation, economic thought, and the impact of Gandhi on modern world politics.

MODULE-1

UNIT-1 12L+8T+0P=20 Hours

INTRODUCTION TO GANDHIAN THOUGHT:

The early 20th-century political scenario in India and World (with special reference to Great Britain and South Africa); Non – Violent techniques (Conflict Resolution, Social Justice and Reform, Self-Rule, Nation Building).

UNIT-2 12L+8T+0P=20 Hours

INFLUENCES ON GANDHIJI'S THOUGHT:

Influence of the Oriental Culture; Impact of the Western thought; Influence of different religions; Fundamental Concepts in Gandhian Thought; Sadhya-sadhan Shuchita; Ahimsa; Satya.

PRACTICES:

- Examine the historical background of Mahatma Gandhi's thought.
- Find the relevance of Gandhian way of life in the society.
- Ascertain the difference between western political thought and Gandhian thought.
- The impact of Gandhi on Indian Culture.

MODULE-2

UNIT-1 12L+8T+0P=20 Hours

GANDHIJI'S THOUGHTS ON SOCIAL TRANSFORMATION:

Religious Harmony; Removal of Untouchability; Women's Emancipation; Economic Thought of Gandhiji; Value-Based Approach; Critique of Modern Civilization; Swadeshi and Khadi; Selfsufficient Village System.

UNIT-2 12L+8T+0P=20 Hours

IMPACT OF GANDHIAN THOUGHT

Impact of Gandhian Thought on the Constitution of India; Vinoba Bhave and Bhoodan Movement; Martin Luther King and Movement against Racism.

PRACTICES:

- The impact of Gandhi on Indian religions.
- Analyse the economic thought of Gandhi and its relevance to the present.
- Evaluating the importance of Vinoba Bhave and the Bhoodan Movement.
- The impact of Gandhi on Indian Culture.

SKILLS:

- Analyse the importance of Gandhian Thought in Contemporary society.
- ➤ Compare different perspectives of Western Political Thought and Gandhian Thought.
- ➤ Identify the impact of Gandhiji on Indian Culture, Religion, Social Transformation, Indian Constitution.

COURSE OUTCOMES:

Upon successful completion of the course, students will have the ability to:

CO No.	Course Outcomes	Blooms Level	Module No.	Mapping with PO's
1	Analyse the historical background of Gandhi.	Analyze	1	6
3	Gain the knowledge of Indian Tradition, Social Transformation, and economic thought of Gandhi.	Analyse	2	6
2	Examine the difference between western political Thought and Indian Political Thought.	Evaluate	1	6
4	Evaluate the impact of Gandhi on Indian culture, religion, making of the Indian Constitution, and movements.	Evaluate	2	6

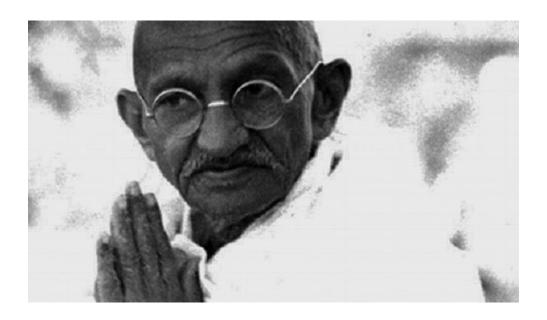
TEXTBOOKS:

- 1. Ram Chandra Guha, "Gandhi: The Years That Changed the World, 1914-1948", Penguin Allen Lane, 2018.
- 2. Ram Chandra Guha "India After Gandhi: The History of the World's Largest Democracy", Picador India, 2017.

REFERENCE BOOKS:

- 1. The collected works of Mahatma Gandhi (All volumes).
- 2. M.K Gandhi. "My Experiments with Truth (Autobiography)".

Image: https://sambadenglish.com/odisha-guest-house-that-hosted-mahatma-gandhi-to-become-museum/



MINOR ON WAYS OF WELLBEING

Offered by Student Affairs and Physical Education

Wellbeing is fundamental to our health and overall happiness. Having a strong and well-adapted sense of wellbeing can help overcome difficulties and help achieve the goals in life. Research has shown that a greater sense of wellbeing relates to increased physical benefits, such as lower incidences of cardiovascular disease, stroke and sleeping problems, and with increased productivity and creativeness in both employment and personal lives. In short, having high levels of wellbeing helps us to be the best versions of ourselves.

Enhancing the wellbeing isn't always easy, but it is always worth it. Eating a healthy balanced diet, getting enough sleep and exercise, and creating healthy habits to look after your physical health are some of the easiest ways to help develop your sense of wellbeing (although, this is often easier said than done).

Partaking in an activity that fully captures our engagement helps us to be "in the moment" and enables time to "fly by". These types of activities flood our brains with happy hormones and neurotransmitters and help to enhance our intelligence, skill and emotional capabilities.

Isolation can be detrimental to us physically and emotionally. Positive relationships with other people can bring us great joy, a sense of safety and value, and can provide support when times get difficult.

This minor is being introduced to let the students know the importance of wellbeing and how it affects the happiness levels of a person. In this minor several aspects are covered such as physical, psychological, emotional and relational wellbeing.

The different subjects offered under ways of wellbeing are:

Course Code	Course Title		T	P	C
22SA901	Physical wellbeing	2	0	4	4
22SA902	Psychological wellbeing	2	0	4	4
22SA903	Emotional wellbeing	2	0	4	4
22SA904	Relational wellbeing	2	0	4	4
22SA905	Case study - Project	2	0	4	4

22SA901-PHYSICAL WELLBEING

Hours per week

L T P C

2 - 4 4

PREREQUISITE KNOWLEDGE: Nil

COURSE DESCRIPTION AND OBJECTIVES:

This course provides an insight about human body as its functioning is influenced by physical activities and provides the necessary knowledge of the theory and practice of yoga to practice yoga for promoting their health and effectiveness.

MODULE 1

UNIT-1 6L+0T+12P= 18 Hours

INTRODUCTION TO YOGA AND HUMAN BODY:

Definitions and development of 'Yoga'-Aim, objectives and scope of yoga, Traditional literature on yoga- Rules and Regulations for Practice of Yoga.

Introduction to human body: Skelton -Cell and Tissues - Bones & muscles, The Circulatory System, The Respiratory System, Introduction to Endocrine glands, The Nervous System.

UNIT-2 10L+0T+20P=30 Hours

INTRODUCTION TO POSTURES:

Meditative Postures: Sukhasan, Swastikasana; Vajrsan; Ardha padmasan, padmasan, Siddhasan; **Relaxation postures:** Shavasana; Advasana; Jyeshtikasana; Makharasana; Matsya kridasana

MODULE 2

UNIT-1 6L+0T+12P= 18 Hours

SCHOOLS OF YOGA AND YOGA DARSHAN:

Branches of Yoga: Bhakti Yoga- Karma Yoga- Jnana Yoga- Mantra Yoga-Kundalini Yoga Techniques of hatha yoga: Shat kriya, Asanas, Pranayams, Bandhas and Mudras. Structure of yoga sutras, Chitta vritties, Abhyasa & Vairagya, Concept of Ishwara, Yoga obstacles, Pancha Kleashas, Astanga Yoga

UNIT-2 10L+0T+20P=30 Hours

INTRODUCTION TO KRIYAS:

Kriyas: Jalaneti, Sutraneti, Jala Dhauti, Vastra Dhauti, Varisara Dhauti (Sankhaprakshalana). Standing postures: Tiryak Tadasana, Trikonasana, Parivrita Trikonasana, Katichakrasana; Parsyakonasan.

Balancing Postures: Tadasana; Vrikshasana; Natarajasan; Ekapadasana; Merudandasana. Sitting postures: Bhadrasana; Virasana; Supta Veerasan; Vakrasana; Ardha—matsyendrasana

SKILLS:

- Ability to self regulate.
- Ability to recover quickly from difficulties.
- Ability to do team work.
- Ability to express confidently.
- Ability to think creatively.

COURSE OUTCOMES:

Upon successful completion of this course, students will have to ability to:

CO No.	Course Outcomes	Blooms Level	Module No.	Mapping with POs
1	Understand the knowledge about the theory and practice of Yoga and its nature.	Analyze	1,2	1,2,6,9
2	Make familiar with the different system of the body with Yogic approach.	Apply	1,2	1,2,9,12
3	Skills in explanation and demonstration of various Yogic practices.	Apply	2	1,2,3,9,12
4	Understood the information about the importance of diet and nutrition.	Evaluate	2	1,2,9,12
5	Ability to set up Yoga therapy center and skill to maintain case studies.	Create	1	1,2,3,9,12

TEXT BOOKS:

- 1. Sachitra Yoga pradipika: B. K. S. Ayyanger
- 2. Yoga Chaitanya Pradipika: Yogacharya Dr. Raparthi Ramarao

REFERENCE BOOKS:

- 1. Journey to Real Self: Dr. Raparthi Ramarao
- 2. Asana pranayama Mudras Bandhas: Swami Satyananda Saraswati

Image source

https://www.entrepreneur.com/en-in/lifestyle/importance-of-physical-wellbeing-during-this-lockdown/353697

Image filename:

Physical wellbeing

22SA902-PSYCHOLOGICAL WELLBEING

Hours per week

L	T	P	C
2	-	4	4

PREREQUISITE KNOWLEDGE: Nil

COURSE DESCRIPTION AND OBJECTIVES:

This course is to understand the well-being paradigm and develop a perspective in order to understand the increasing vulnerability in a changing context. This course enables the learner to explore the concept of mental health and to distinguish the same from mental illness and appreciate the significance of mental health promotion.

MODULE-1

UNIT-1 6L+0T+12P=18 Hours

INTRODUCTION

Key components of psychological wellbeing, Types of psychological wellbeing.

UNIT-2 10L+0T+20P=30 Hours

KEY ISSUES AND CONCERNS OF ADOLESCENTS

Defining Adolescence, Challenges during adolescence, Depression, Bullying, Substance Abuse, Cyber Issues, Obsessive Compulsive Behaviours, Abuse and Trauma

MODULE-2

UNIT-1 6L+0T+12P=18 Hours

NEUROCHEMICAL EFFECTS

Patterns of Brain Activation, Neurochemical Effects.

UNIT-2 10L+0T+20P=30 Hours

SOCIAL FACTORS

Social Factors and Brain Development, Genetic Factors, Personality, Self-esteem, Self-confidence, Resilience

SKILLS:

- Personal growth and development.
- Self-acceptance
- Pay attention to the present moment (mindfulness)
- The pursuit of meaningful goals and a sense of purpose in life.

COURSE OUTCOMES:

Upon successful completion of this course, students will have to ability to:

CO No.	Course Outcomes	Blooms Level	Module No.	Mapping with POs
1	Understand the fundamentals concepts of Psychological wellbeing.	Create	1	1,2,6,9
2	Predict outcomes of social situations by applying principles social factors.	Analyze	1,2	1,2,9,12
3	Apply the knowledge of psychological wellbeing in different walks of life	Apply	1,2	1,2,3,9,12
4	Empower to measure Interest, Intelligence, Aptitude, Personality, Adjustment skills etc.	Evaluate	2	1,2,9,12
5	Conceptualize adolescents behaviour & personality in holistic way.	Create	1,2	1,2,3,9,12

TEXT BOOKS:

- 1. Principles of Psychology by William James.
- 2. Stumbling on Happiness by Daniel Gilbert.

REFERENCE BOOKS:

- 1. Snyder, C. R., Shane J. Lopez, and Jennifer Teramoto Pedrotti. Positive Psychology: The Scientific and Practical Explorations of Human Strengths. 2nd ed.
- 2. Why Zebras Don't Get Ulcers, by Robert M. Sapolsky.
- 3. Wellness: Mental Health Robert E. Kime Hardcover

Image source:

http://www.howard-fensterman-charities.com/2017/12/importance-mental-health-counseling/

Image filename:

Psychological wellbeing

22SA903-EMOTIONAL WELLBEING

Hours per week

L T P C

2 - 4 4

PREREQUISITE KNOWLEDGE: Nil

COURSE DESCRIPTION AND OBJECTIVES:

The course deals with emotional attributes of humans. Also, elaborates on applications of emotions at workplace and developing prosocial behaviour.

MODULE-1

EMOTIONAL WELLBEING

UNIT-1

6L+0T+12P = 18 Hours

Introduction: Emotional Intelligence; Models of Emotional Intelligence; EQ Competencies: Self Awareness, Self-Management, Empathy, and Interpersonal Skills; Importance of Emotional Intelligence.

Knowing one's own and other's emotions: Levels of emotional awareness; Recognizing emotions in oneself; The universality of emotional expression; Perceiving emotions accurately in others.

UNIT-2 10L+0T+20P=30 Hours

PRO SOCIAL BEHAVIOUR

Developing Prosocial behaviour: Promoting positive emotions, Empathy-Altruism Hypothesis, Negative-State Relief Hypothesis, Empathetic Joy Hypothesis

Five Decision Points in Pro-social Behaviour: Notices something unusual in the situation, interprets it as an emergency, Assumes responsibility to help, Understanding if you have the skill required to give help and decide how to help, Decide to implement help.

MODULE-2

UNIT 1 STRESS AND COPING

6L+0T+12P=18 Hours

Introduction: Types of stress, Sources of stress, Stress Response.

Coping Mechanisms: Coping Mechanisms: Appraisal focused, Emotional focused and Problem focused.

Stress Reduction Techniques: 1. Autogenic Training 2. Biofeedback 3. Relaxation 4. Yoga and Meditation

UNIT 2 10L+0T+20P=30 Hours

MANAGING EMOTIONS

Managing Emotions: The relationship between emotions, thought and behaviour; Techniques to manage emotions.

Applications of Emotional Intelligence: Workplace; Relationships; Academics.

SKILLS:

- Design models for interpersonal relations
- Develop techniques to manage emotions.

• Perceive emotions in others.

COURSE OUTCOMES:

Upon successful completion of this course, students will have to ability to:

CO No.	Course Outcomes	Blooms Level	Module No.	Mapping with POs
1	Enable to understand how positive emotional states contribute to resilience, happiness, and wellbeing.	Analyze	1,2	1,2,6,9
2	To foster the ability to identify and manage one's own emotions, as well as the emotions of others.	Apply	1,2	1,2,9,12
3	Help to deal with negative emotional states and promote more positive emotions in its place	Apply	2	1,2,3,9,12
4	To appreciate the application of emotional intelligence in myriad settings, such as the workplace, relationships, etc.	Evaluate	2	1,2,9,12
5	Identify and implement the stress relaxation techniques in daily life.	Apply	2	1,2,9,12

TEXT BOOKS:

- 1. Emotional Success: The Power of Gratitude, Compassion and Pride. by David DeSteno.
- 2. The Book of Human Emotions: An Encyclopedia of Feeling from Anger to Wanderlust. by Tiffany Watt Smith.

REFERENCE BOOKS:

- 1. Anand, P. (2017). Emotional Intelligence: Journey to Self Positive. New Delhi: The Readers Paradise.
- 2. Bar-On, R., & Parker, J.D.A. (Eds.) (2000). The Handbook of Emotional Intelligence. San Francisco, California: Jossey Bros.
- 3. Goleman, D. (1995). Emotional Intelligence. New York: Bantam Book.

Image source:

https://www.rutgers.edu/news/maintaining-emotional-health-and-wellbeing-during-covid-19

Image filename Emotional wellbeing

22SA904-RELATIONAL WELLBEING

Hours per week							
L	T	Г Р С					
2	0	4	4				

PREREQUISITE KNOWLEDGE: Nil

COURSE DESCRIPTION AND OBJECTIVES:

This course provides an insight about the Relationships to develop an understanding of the concept of individual differences with the goal to promote self-reflection and understanding of self and others.

MODULE-1

UNIT 1 6L+0T+12P= 18 Hours

RELATIONAL WELLBEING

Introduction: Healthy Versus Unhealthy Relationships, Building Social Bonds - Connections

That Promote Well-Being, Ways to Improve Relational Wellbeing

The Dimensions of Relational wellbeing: Subjective, Relational, Material

UNIT 2 10L+0T+20P = 30 Hours

Introduction: Meaning and benefits of Interpersonal skills, Components of Interpersonal skills, Techniques of improving Interpersonal skills.

MODULE-2

UNIT 1 6L+0T+12P= 18 Hours

GERONTOLOGY

Introduction: Physical and social Aspects of Aging, Nutrition and Exercise, Disorders and Disabilities of old people, Principles of Gerontological Nursing, Approach to an elderly patient, Tools & scales for assessment, Assessment of Psychosocial and physical environment of elderly, Dietary assessment, life style, Anthropometry of old people, Counselling the older person, Common problems requiring counselling.

UNIT 2 10L+0T+20P= 30 Hours

RELATIONAL WELLBEING WITH PEERS

family life cycle healthy Marital. couple. and dynamics, family functioning. family structures, and development in a multicultural society. family origin intergenerational influences. cultural heritage. socioeconomic and status and belief systems, Societal trends and treatment issues related to working with diverse family systems (e.g. Families in transition. dual-career couples, and blended families)

Applications of Healthy Relationships: Family, Workplace, School/College, Peer group.

SKILLS:

- Ability to communicate effectively
- Ability to understanding of self and others.

- seeking and offering help when needed.
- Building healthy relations with family, friends, elders and old people.
- Active listening.

COURSE OUTCOMES:

Upon successful completion of this course, students will have to ability to:

CO No.	Course Outcomes	Blooms Level	Module No.	Mapping with POs
1	Understand the basic relationship of Individual with society.	Create	1,2	1,2,6,9
2	Understand the importance of interpersonal relations, love and aggression in social world.	Create	1,2	1,2,9,12
3	Work on Decision making process, Team building and group dynamics in outer world.	Analyze	1,2	1,2,3,9,12
4	Apply the concepts of promoting healthy relationships for the community	Apply	1,2	1,2,9,12
5	Critically evaluate symptoms, and treatments of various types of disabilities of old people.	Evaluate	2	1,2,9,12

TEXT BOOKS:

- 1. Wellness: Mental Health Robert E. Kime Hardcover
- 2. Contemporary Perspectives on Relational Wellness Psychoanalysis and the Modern Family

REFERENCE BOOKS:

- 1. Creating relationship wellness by Stephanie Wijkstrom
- 2. Mindful Relationship Habits by S.J. Scott and Barrie Davenport

Image source

https://www.commonwisecare.com/advantages-of-taking-care-of-the-elderly-at-home/

Image filename

Relational wellbeing

R22 B.Tech.







COURSE STRUCTURE - R22

I Year I Semester

Course Code	Course Title	L	т	Р	С	Course category
22MT101	Elementary Mathematics	3	2	0	4	Basic Sciences
22PY101	Applied Physics	2	0	2	3	Basic Sciences
22EE101	Basics of Electrical and Electronics Engineering	2	0	2	3	Basic Engineering
22BT103	IT Workshop and Bioproducts	1	0	4	3	Basic Engineering
22TP103	Programming in C	2	0	4	4	Basic Engineering
22EN102	English Proficiency and Communication Skills	0	0	2	1	Humanities
22SA101	Physical Fitness, Sports and Games - I	0	0	3	1	Binary grade
22TP101	Constitution of India	0	2	0	1	Binary grade
	Total		4	17	20	
31 Hrs						

I Year II Semester

Course Code	Course Title	L	Т	Р	С	Course category
22MT110	Matrices and Differential Equations	3	2	0	4	Basic Sciences
22CT104	Organic Chemistry	2	0	2	3	Basic science
22TP104	Basic Coding Competency	0	1	3	2	Basic Engineering
22ME101	Engineering Graphics	2	0	2	3	Basic Engineering
22EN104	Technical English Communication	2	0	2	3	Humanities
22BT102	Good Laboratory Practices	2	2	0	3	Professional core
22SA103	Physical Fitness, Sports & Games – II	0	0	3	1	Binary grade
22SA102	Orientation Session	0	0	6	3	Binary grade
Total			5	18	22	
34 Hrs						

[#] Department Subject is extension of Basic sciences

VFSTR 6

COURSE STRUCTURE - R22

II Year I Semester

Course Code	Course Title	L	Т	Р	С	Course category
22ST201	Biostatistics and Design of Experiments	3	2	0	4	Basic Sciences
22TP201	Data Structures	2	2	2	4	Basic Engineering
22BT101	Cell and Molecular Biology	3	0	2	4	Professional core
22BT201	Biochemistry and Enzymology	3	0	2	4	Professional core
22BT202	Chemical Engineering Principles in Biotechnology	2	0	2	3	Professional core
22BT203	Microbiology and Fermentation Technology	3	0	2	4	Professional core
22SA201	Life Skills-I	0	0	2	1	Binary grade
	Total	16	4	12	24	
	NCC/ NSS/ SAC/ E-cell/ Student Mentoring/ Social activities/ Publication.	0	0	0	1	Floating credits Binary grade
	Total	16	4	12	25	
			32	Hrs		

II Year II Semester

Course Code	Course Title	L	Т	Р	С	Course category
22TP203	Advanced Coding Competency	0	0	2	1	Basic Engineering
22TP204	Professional Communication	0	0	2	1	Humanities
22BT204	Bioanalytical Techniques	3	0	2	4	Professional core
22BT205	Industrial Biotechnology	3	0	2	4	Professional core
22CT201	Environmental Studies	1	1	0	1	Basic Sciences
22MS201	Management Science	2	2	0	3	Humanities
	Department Elective – 1	2	2	0	3	Department Elective
	Open Elective – 1	2	2	0	3	Open Elective
22SA202	Life Skills-II	0	0	2	1	Binary grade
Total		13	7	10	21	
	Minor / Honours - 1	3		2	4	
Total			35	Hrs		

R22 B.Tech.



DEGREE PROGRAMME



VFSTR