

Marathawada Shikshan Prasarak Mandal's  
**Shri Muktanand College, Gangapur**  
Dist.-Aurangabad  
Cross Cutting Issues Present in Curriculum

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**Shri Muktanand College, Gangapur**  
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**Cross Cutting Issues**  
**Department of English**  
**B.A./B. Com./B. Sc. (UG)**

Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
1	BA/B. Sc. I Paper No. — I Learning Language Skills-I: Paper-I First Semester) Prose Section	I	I. Happy Prince- Oscar Wilde ➤ Good Manners- J.C. Hill ➤ The Eyes Are Not Here- Ruskin ➤ Forgetting- Robert Lynd. ➤ Home Coming- Rabindranath Tagore	Professional Ethics	Human Values	-----	-----
2	BA/B. Sc. I Paper No. — I Learning Language Skills-I: Paper-I First Semester Poetry Section	I	I. One Day I Wrote Her Name upon the Strand-Edmund Spenser 2) Ode on Solitude- Alexander Pope 3) If- Rudyard Kipling 4) My Love Is Like Red Red Rose- Robert Burns 5) Stopping by Woods on a Snowy Evening- Robert Frost	-----	Human Values	-----	-----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
3	BA/B. Sc. I Paper No. -I Learning Language Skills-I: Paper-II Second Semester) Prose Section	II	<ul style="list-style-type: none"> <li>➤ The Bet- Anton Chekov</li> <li>➤ The Three Questions- Leo Tolstoy</li> <li>➤ With the Photographer- Stephen Leacock</li> <li>National Prejudices- Oliver Goldsmith</li> </ul>	Professional Ethics	Human Values	-----	-----
4	BA/B. Sc. I Paper No. --II Learning Language Skills-I: Second Semester) Poetry Section	II	<ul style="list-style-type: none"> <li>➤ Where the Mind is Without Fear- Rabindranath Tagore</li> <li>➤ The Solitary Reaper- William Wordsworth</li> <li>➤ Ozymandias of Egypt- P.B.Shelly</li> <li>➤ Laugh and be Merry- John</li> <li>➤ The Toys- Coventry Patmore</li> </ul>	-----	Human Values	-----	-----
5	BA/B. Sc. II Paper: III Compulsory English	III	Prose: <ul style="list-style-type: none"> <li>➤ The Importance of English</li> <li>➤ How to Make a Speech</li> <li>➤ The Night Train at Deoli</li> <li>➤ The Conjuror's Revenge &amp; The Lunchon</li> </ul>	Professional Ethics	Human values	-----	Gender



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			Poetry: 1. First Love — John Clare; 2. All the World's a Stage — William Shakespeare; 3. Next, Please — Philip Larkin; 4. Father Returning Home — Dilip Chitre; 5. Dover Beach — Mathew Arnold	Professional Ethics	Human values	-----	Gender
6	BA/B. Sc. II Paper: IV Compulsory English	IV	Prose: 1. How to Avoid Argument — Sam Horn 2. The Avenger —Anton Chekhov 3. On Not Answering the Telephone — W. Plomer 4. The Sporting Spirit — George Orwell 5. The Old Man at the Bridge — Ernest Hemingway	Professional Ethics	Human values	-----	Gender
			Poetry ➤ Gather Ye Rosebuds — Robert Herrick ➤ Mirror — Sylvia Plath ➤ Sonnet 43 — Elizabeth Browning ➤ Nobody Loves Me — Albert J. Nimeth ➤ Night of the Scorpion — Nisim Ezekiel	-----	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
7	BA II Paper: VI Optional English Literature in English 1750- 1900	IV	1) The Ballad 2) Features of Romantic Age 3) Rime of Ancient Mariner Far From Madding Crowd	----	Human values	----	Gender
8	BA II Paper: VIII Optional English Literature in English 1750- 1900	IV	1) The Dramatic Monologue 2) Victorian Age 3) The Last Ride Together 4) Importance of Being Earnest	----	Human values	----	Gender
9	B.A. III Paper: IX 20 <sup>th</sup> Century Literature in English	V	1. T.S. Eliot's Poem: The Love Song of J. Alfred Prufrock 2. T.S. Eliot's Poem: Prelude 3. G.B. Shaw's Play: Pygmalion 4. D.H. Lawrence's Fiction: Sons and Lovers	----	Human values	----	Gender
10	B.A. III Paper: XII Paper: XIII 20 <sup>th</sup> Century Literature in English	VI	1) W.B. Yeats' Poem: Easter 1916 2) W.B. Yeats' Poem: The Second Coming 3) W.B. Yeats' Poem: Among School Children 5. John Osborne's Play: Look Back in Anger. 6. Kingslay Amis' Fiction: Lucky Jim	----	Human Values	----	----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
11	B. Corn. I Paper I Written and Spoken Communication in English	I	1. Basic Grammar 2. Basic Composition 3. Basic Phonetics 4. Basic Conversation	Professional Ethics	----	----	----
12	B. Corn. I Paper II Written and Spoken Communication in English	II	1. Basic Grammar 2. Basic 3. Composition 4. Basic Phonetics 5. Basic Conversation	Professional Ethics	----	----	----
13	B. Corn. II Paper III English for Entrepreneurs	III	Business Communication 1. Transactional Writing 2. Discussions/Meetings/Team Skills 3. Jobs and Careers 4. Prose for Business Inspiration	Professional Ethics	----	----	----
14	B. Corn. II Paper IV English for Entrepreneurs	IV	Business Communication 1. Transactional Writing 2. Discussions/Meetings/Team Skills 3. Jobs and Careers 4. Prose for Business Inspiration	Professional Ethics	----	----	----



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**B.A./B. Com./B. Sc. (UG)**

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				Professional Ethics	Human Values	Environment, Sustainability	Gender
15	Paper: I Compulsory English A Course in Communicative English	I	Prose: 1. The Essence of Democracy - Dr. B.R. Ambedkar 2. Orpheus and Eurydice - William Byron F or bush 3. A Tribute to the Buddha - Maharaja Sayajirao Gaekwad 4. Spoken English and Broken English-George Bernard Shaw 5. Sir Isaac Newton Nathaniel Hawthorne Poetry: 1. A Prayer for My Daughter - W.B. Yeats 2. A Psalm of Life - H.W. Long fellow 3. The Toys-Coventry Patmore 4. Let Me Not to the Marriage of True Minds William Shakespeare Night of the Scorpion Nissim Ezekiel	Professional Ethics	Human values	----	Gender



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
16	Paper BA I: II Compulsory English A Course in Communicative English	II	Prose: 1. India's Message to the World Swami Vivekananda 2. Are the Rich Happy? - Stephen Leacock 3. I Have a Dream Martin Luther King Jr. 4. Going Public: A Man of Wealth and Fame - Walter Isaacs on 5. Gold from the Grave Anna Bhau Sathe	Professional Ethics	Human values	----	Gender
			Poetry: Stopping by Woodsona Snowy Evening Robert Frost, Poem of Serpents Loknath Yashwant, Strange Meeting Wilfred Owen, The Ballad of the Landlord Langston Hughes, The Tiger and the Deer Sri Aurobindo				





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				Professional Ethics	Human Values	Environment, Sustainability	Gender
17	BA TT Paper: III Compulsory English A Course in Communicative English	III	Prose: 1. Preamble, Fundamental Rights, and Fundamental Duties (Constitution of India) 2. Memorial Addressed to the Education Commission Joteerao Govindrao Phooley. 3. The Doll's House Catherine Mansfield 4. How to Tell a Story? - Mark Twain How Much Land Does a Man Need? — Leo Tolstoy	Professional Ethics	Human values	----	Gender
			Poetry: 1. Captain! My Capta in Walt Whitinan 2. The Leech Gatherer William Wordsworth 3. Hopels the Thing with Feathers – Emily Dickinson 4. The Conversation on a Magshar Night- Dalpat Chauhan 5. Money Madness D.H. Lawrence	Professional Ethics	Human values	----	Gender
18	BA II Paper: IV Compulsory English A Course in Communicative English	IV	Prose: 1. Of Society and Civilization - Thomas Paine 2. My Greatest Olympic Prize- Jesse Owens 3. The Pleasures of Ignorance- Rohert Lynd 4. The Lottery Ticket- Anton Chekhov 5. The Gift of the Magi-O. Henry	Professional Ethics	Human values	----	G e n d e r



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
	BA II Paper: IV Compulsory English A Course in Communicative English	IV	Poetry: 1. To My Daughter- Balamani Amma 2. Amalkanti - Nirendranath Chakrabarti 3. Woman- Hira Bansode 4. And the Dream Bird- Sudhanya Tripura 5. Spring-EzraPound	Professional Ethics	Human values	----	Gender
19	BA I Paper: I Optional English Forms of Literature	I	The Merchant of Venice-William Shakespeare Train to Pakistan - Khushwant Singh	----	Human Values	----	----
20	BA I Paper: II Optional English Forms of Literature	I	Three Sisters – Anton Chekhov	----		----	Gender
21	BA I Paper: III Optional English Forms of Literature	II	Justice- John Galsworthy the Alchemist-Paulo Cohelo	----	Human Values	----	----
22	BA I Paper: IV Optional English Forms of Literature	II	Doctor Faust us Christopher Marlowe The English Patient- Michael Ondatjee	----	Human Values	----	----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
23	BA II Paper: V Optional English Literature in English	III	The Comedy of Errors- William Shakespeare As I Lay Dying- William Faulkner		Human Values	----	----
24	BA II Paper: VI Optional English Literature in English	IV	The Strong Breed – Wole Soyinka Dancing Girls and Other Stories- Margaret Atwood		Human Values	----	----
25	BA III Paper: VII Optional English Literature in English	V	Duchess of Malfi- John Webster Utopia- Thomas More	Professional Ethics	----	----	----
26	BA III Paper: VIII Optional English Literature in English	V	Tomb of Sand- Geetanjali Shree	----	Human Values	----	----



Marathawada Shikshan Prasarak Mandal's  
**Shri Muktanand College, Gangapur**  
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**Cross Cutting Issues**  
**Department of Marathi**  
**B.A./B. Com. (UG)**

Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
1	बी.ए.प्रथम वर्ष ऐच्छिक सत्र पहिले पेपर- १०२	प्रथम वर्ष	नाट्यात्म साहित्य,	Professional Ethics	Human Values	-----	Gender
2	बी.ए.प्रथम वर्ष ऐच्छिक सत्र दुसरे पेपर-१०४	प्रथम वर्ष	मुहित माध्यमासाठी ले खन कौशल्ये	Professional Ethics	-----	-----	-----
3	बी.ए. बी.एस्सी.बी.कॉम. द्वितीय वर्ष, पेपर 03	प्रथम वर्ष	गद्य-पद्य उपयोहजत मराठी	Professional Ethics	-----	-----	-----
4	बी.ए. बी.एस्सी.द्वितीय वर्ष, पेपर 03	III	गद्य-पद्य उपयोहजत मराठी	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
5	बी.ए. द्वितीय वर्ष ऐच्छिक सत्र पहिले पेपर-१०६	II	दृक-श्राव्य माध्यमांसाठी लेखन कौशल्ये	Professional Ethics	-----	-----	-----
6	बी.ए. द्वितीय वर्ष ऐच्छिक सत्र पहिले पेपर-१०८	II	साहित्य प्रकारांतर आहण साहित्याचे माध्यमांतर	Professional Ethics	-----	-----	-----
7	बी.ए. तृतीय वर्ष ऐच्छिक सत्र पहिले पेपर-९ वा	III	भारतीय साहित्यहवचार	Professional Ethics	-----	-----	-----
8	बी.ए. तृतीय वर्ष प्रमुख सत्र पहिले पेपर-११ वा	III	मध्ययुगीन मराठी वाङमयाचा इतिहास (प्रारंभ ते १६००)	Professional Ethics	-----	-----	-----
9	बी.ए. तृतीय वर्ष ऐच्छिक सत्र दुसरे पेपर- १३ वा	III	पाश्चात्य साहित्य	Professional Ethics	-----	-----	-----
10	बी.ए. तृतीय वर्ष प्रमुख सत्र दुसरे पेपर- १५ वा	III	मध्ययुगीन मराठी वाङमयाचा इतिहास (१६०१ ते १८१८)	Professional Ethics	-----	-----	-----



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**Shri Muktanand College, Gangapur**  
 Dist.-Aurangabad  
**Department of Hindi**  
**B.A./B. Com./B. Sc. (UG)**

Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
1	बी.ए.प्रथम वर्ष ऐच्छिक	I	अलखआजादी की- बाल मनोहवज्ञान,मानवी भाव,अतीत का गौरव, पयाषवरण.ग्रामसंस्कृ हत	-----	-----	Environment, Sustainability	-----
2	बी.ए प्रथम वर्ष हद्वतीय भार	I	कथा साहित्य- समस्त मानवी मूल्यो की प्रहतष्ठा, संवेदनशीलता	-----	Human Values	-----	-----
3	बी.ए. द्वितीय वर्ष ऐच्छिक सत्र	II	प्रयोजनमूलक हिंदी भारत	Professional Ethics	-----	-----	-----
4	बी.ए. द्वितीय वर्ष ऐच्छिक सत्र	II	सामान्य हिंदी- भारत की प्रहतष्ठा और मित्व,सम्प्रेर्ण का मित्व,भारत कौशल, पयाषवरण,हलंग भाव आधुहनक दृष्ठी	Professional Ethics	-----	-----	-----
5	बी.ए.तृतीय वर्ष	III	हिंदी साहित्य का इतिहास	Professional Ethics	-----	-----	-----
6	बी.ए.तृतीय वर्ष	III	मध्यकालीन संत साहित्य आधुहनक कहवता-	Professional Ethics	-----	-----	-----
7	बी.ए प्रथम वर्ष ऐच्छिक	I	अहमता- यशपाल, कथायात्रा-,मानवी भाव, पयाषवरण.ग्रामसंस्कृ हत,	-----	-----	Environment, Sustainability	-----



Marathawada Shikshan Prasarak Mandal's  
**Shri Muktanand College, Gangapur**  
 Dist.-Aurangabad  
**Cross Cutting Issues**  
**Department of Political Science**  
**B.A. (UG)**

Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
1	<b>BAFY</b> <b>Paper Code:-</b> <b>Pol.</b> <b>101/103</b> <b>Basic Concept</b> <b>of</b> <b>Political</b> <b>Science</b>	I & III	<b>1 State</b> A. Meaning and nature of State B. Elements of State C. Theories of State Origin	-----	Human Values	-----	---
			<b>2. Government</b> A. Legislature B. Executive C. Judiciary	Professional Ethics	Human Values	-----	Gender
			<b>3 Sovereignty</b> A. Austins Theory Sovereignty B. Pluralist Theory of Sovereignty	-----	-----	-----	-----
			<b>4. Citizenship &amp; Rights</b> A. Meaning and Types B. Types of Right and Duties	Professional Ethics	Human Values	-----	Gender
			<b>5 Liberty, Equality &amp; Justice</b> A. Meaning and Defmation B. Type of liberty and Equality	-----	-----	-----	Gender
			<b>6 Rights</b> A. Meaning and Nature B. Types of Rights	Professional Ethics	Human Values	Sustainability Environment	Gender
			<b>7. Democracy</b> A. Meaning and Features B. Direct and Indirect Democracy C. Merits and Demerits of Democracy	-----	-----	-----	Gender



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<b>8. Welfare State</b> A. Meaning and Features B. Function of Welfare State	----	Human Values	Sustainability Environment	Gender
2	<b>BAFY</b> <b>Paper Code:-</b> <b>Po1.102/104</b> <b>Government &amp; Politics of Maharashtra</b>	<b>I &amp; II</b> <b>S y s t e m</b>	<b>1. Historical and Political Background of Maharashtra</b> A. Sanyukt Maharashtra Movement B. State Reorganization Commission	Professional Ethics	Human Values	----	Gender
			<b>2 Historical and Political Background of Maharashtra</b> A. Sanyukt Maharashtra Movement B. State Reorganization Commission	Professional Ethics	Human Values		Gender
			<b>3. Organization Of Government</b> A. Legislature B. Executive Judiciary	Professional Ethics	Human Values	----	Gender
			<b>4. Movements</b> A. Cooperative Movements B. Peasant Movements C. Dalit Movements D. Feminist Movements	-----	Human Values	-----	Gender
			<b>5. Panchayat Raj</b> A. Historical Background of PR Grmapanchayat. Panchayat Samiti	-----	Human Values	----	Gender
			<b>6. Ideology &amp; Programme of Political Parties</b> A. Congress, NCP B. BJP, Shivsena C. RPI, BBP. CPI, CPM	Professional Ethics	Human Values	Sustainability, Environment	Gender





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				Professional Ethics	Human Values	Environment, Sustainability	Gender
3	BASY Paper Code:- Pol- 105/107 Indian Government & Politics	HI & IV	<b>1. Indian Constitution</b> A. Source B. Preamble Features	Professional Ethics	Human Values	Sustainability, Environment	Gender
			<b>2 Constitutional Provisions</b> A. Fundamental Rights B. Directive Principal of State Policy	Professional Ethics	Human Values	-----	Gender
			<b>3. Union Government</b> A. President B. Parliament Prime-minister	-----	Human Values	-----	Gender
			<b>4. Budgetary Processes and Parliamentary Committees</b> A. Budget B. PAC Estimate Committee	Professional Ethics	Human Values	Sustainability, Environment	Gender
			<b>5 Constitutional Institutions</b> A. Attorney General CAG	Professional Ethics	Human Values	-----	-----
			<b>6. Supreme Court</b> A. Structure, Power, Functions Power of Judicial Reviews	Professional Ethics	Human Values	Sustainability, Environment	Gender
			<b>7 Centre- State Relations</b> A. Legislative B. Administrative Financials	-----	Human Values	Sustainability, Environment	-----
			<b>8. Ideology and Programme of Political Parties in India</b> A. Congress, NCP B. BP, Shivsena CPI, CPM	-----	Human Values	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<b>9. Election Commission of India</b> A. Composition, Power, Function Electoral Reforms in India	Professional Ethics	-----	-----	-----
			<b>10.Challenges Before Indian Democracy</b> A. Corruption B. Casteism C. Communalism Regionalism	Professional Ethics	-----	-----	-----
4	<b>BASY Paper Code:- Pol- 1061108 International Relations</b>	<b>III &amp; IV</b>	International Relations	Professional Ethics	Human Values	Sustainability, Environment	Gender
			1. Approaches to the Study of International Relations	Professional Ethics	Human Values		Gender
			a. India's Foreign Policy	Professional Ethics	Human Values	Sustainability, Environment	Gender
			2. National Interest and National b. Power	-----	Human Values	-----	-----
			c. Balance of Power	-----	Human Values	Sustainability	-----
			d. Collective Security and UN	Professional Ethics	Human Values	Sustainability, Environment	Gender
			e. Deterrence	-----	Human Values	Sustainability, Environment	-----
			8. Major Issues in Internationalism	-----		Sustainability, Environment	-----
			9. International and Regional Organizations	Professional Ethics	Human Values	Sustainability	Gender
			10. Non-alignment Movement	-----	Human Values	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
5	BATY Paper Code:- Po1.109/112 Indian Political Thinker	V & VI	<b>Indian Political Thinker</b> A. Raja Ram Mohan Roy B. Dayanand Saraswati C. Gopal Krishna Gokhale D. Lokmanya Tilak E. Mahatma Gandhi F. Maulana Azad G. Jawaharlal Neharu H. M.N. Roy I. Dr. B.R. Ambedkar J. Jayprakash Narayan	Professional Ethics	Human Values	Environment	Gender
6	BATY Paper Code:- Po1.110/113 Western Political Thinker	V & VI	<b>Western Political Thinker</b> A. Plato B. Aristotle C. Niccolo Machiavelli D. Thomas Hobbes E. John Locke F. Jean Jacques Rousseau G. John Stuart Mill H. J e r e m y B e n t h a m I. Karl Marx J Harold Laski	Professional Ethics	Human Values	-----	Gender
7	Paper Code:- Po1.111/114 Political Ideologies	V & VI	<b>Political Ideologies</b> A) Nationalism, B) Liberalism, C) Democracy, D) Imperialism, E) Feminism, F) Socialism, G) Communism, H) Fascism, I)Anarchism, J) Environmentalism	Professional Ethics	Human Values	Environment	Gender



Marathawada Shikshan Prasarak Mandal's  
**Shri Muktanand College, Gangapur**  
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**Cross Cutting Issues**  
**Department of Economics**  
**B.A. (UG)**

Sr. No	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
1	B.A. I Year, Micro Economics (Eco-101, 103, 401,403)	I	Business and Management Skills Ethics	Professional	-----	-----	-----
2	B.A. I Year, Indian Economy (Eco-102, 501, 503)	II	Awareness about Indian Economy, Chapter Human Development	Professional Ethics	Human Values	-----	Gender
3	B.A. II Year, Macro Economics (Eco-105, 402, 404)	III	Economic Policies for betterment of human being	Professional Ethics	Human Values	-----	-----
4	B.A. I Year, Banking and Financial Institutions (Eco- 104, 430, 527,)	I	Money and Financial Management	Professional Ethics	-----	-----	-----
5	B.A. II Year, Public Finance (Eco- 107, 502, 504)	I	Tax policies	Professional Ethics	-----	-----	-----
6	B.A. II Year, Growth and Development Economics (Eco-106, 524, 529)	III	Development Theories for Human and Gender Development	-----	Human Values	Environment, Sustainability	Gender



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Sr. No	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
7	B.A. II Year Statistical Methods Eco-108	III	Statistical Tools for Research Ethics	Professional	-----	-----	-----
9	B.A. III Year International Economics Eco-109, 114	V	International Trade and International Institutions for World development, LPG	-----	Human Values	-----	Gender
10	B.A. III Year History of Economic Thoughts (Eco- 111, 115, 431)	V	Welfare Economic Thoughts of Dr.B.R. Ambedkar, Mahatma Jyotiba Phule, Dr. Amartya Sen	-----	Human Values	Environment, Sustainability	Gender
11	B.A. III Year Research Methodology and Project Work (Eco- 113, 116)	V	Research Methodology in Social Sciences	Professional Ethics	Human Values	Environment, Sustainability	-----
12	B.A. III Year Industrial Economics (Eco-114)	V	Industrial Policies and Role of Industries	Professional Ethics	-----	-----	-----
13	B.A. III Year, Agriculture Economics (Eco-110, 424)	VI	Sustainable Development of Agriculture	-----	Human Values	Environment, Sustainability	-----



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**Cross Cutting Issues**  
**Department of Public Administration**  
**B.A. (UG)**

Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
1	B. A. I Paper I Principals and concept of Public Administration	I	Public and Private administration, Chief executive, Principles of organization, administrative planning, communication, supervision, leadership. Public relation.	Professional ethics	Human values	-----	-----
2	B. A. I Paper II Public administration in India	I	Constitutional Framework Preamble Fundamental rights, directive principles of state policy, fundamental duties.	-----	Human values	-----	Gender
3	B. A. I Paper III Maharashtra Administration	II	Legislative assembly- composition and function, high court Public Litigation Writ. Maharashtra Public service Commission, Maharashtra Election commission	Professional Ethics	Human Values	-----	Gender
4	B. A. I Paper IV District Administration.	II	Role of district collector Law and order	Professional Ethics	Human values	-----	-----
5	B. A. II Paper V Personnel Administration	III	Morale and discipline of Personnel Administration, Various training institutions in India	Professional Ethics.	Human Values	-----	-----
6	B. A. II Paper VI Panchayat raj and Rural Development	III	73 <sup>rd</sup> constitutional amendment, Indira Awas Yojana	-----	-----	-----	Gender



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
7	B. A. II Paper VII Financial Administration	IV	Budget	-----	Human Values	-----	Gender
8	B. A. II Paper VIII Urban Local Self Government and Urban Development	IV	Problems of Urbanization slum, pollution, water supply. transport and traffic	-----	Human Values	Environment	Gender
9	B. A. III Paper IX Human Resource Development	V	Value Education, Human resource planning	-----	Human Values	-----	-----
10	B. A. III Paper X Educational Administration in India	V	Challenges before higher education	-----	Human Values	-----	Gender
11	B A III Paper XI Administrative Thinkers	VI	Max webers ideal model of bureaucracy, Elton Mayos Hawthorne experiments, Herbert Simon behavioural approach	-----	Human Values	-----	-----
12	B. A. III Paper XIII Public policy and development	VI	Sustainable Development, Pollution explosion, unemployment	-----	Human values	Sustainable, Environment	-----
13	B. A. III Paper XIV Health administration in India	VI	Indian care system, Health and family welfare programmes, national rural health mission, determinants of health.	-----	Human Values	Environment	-----
14	B. A. III Paper XV Recent trends in P. A. and important laws	VI	Citizen charter, civil rights protection, consumer protection, environment protection, right to public services.	-----	Human Values	Environment	-----



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**Shri Muktanand College, Gangapur**  
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**Cross Cutting Issues**  
**Department of Sociology**  
**B.A. (UG)**

Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
1	B. A. I Paper II Individual and Society	1	Culture, Caste System	-----	Human Values	-----	-----
2	B. A. I Paper IV Indian Social Composition	I	Bonds of Unity in India, Values of Indian Society, Democracy, Social Justice, Indian Constitution	-----	Human Values	-----	-----
3	B. A. II Paper V Problems of Rural India	II	Problems of Rural Women, Domestic Violence, Dowry	-----	-----	-----	Gender
4	B. A. II Paper VII Population in India	II	Population growth and environment Sex ratios and female feticide	-----	-----	Environment	Gender
5	B. A. II Paper VIII Sociology of Development	III	Gender and Development	-----	-----	-----	Gender
6	B. A. III Paper X Introduction to Research Methodology	V	i) Basic concept of research methodology ii) Types of Research Scientific Research Process	Professional Ethics	-----	-----	-----





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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
7	B. A. III Paper XI Social Problems in India	V	White Collar Crime Educational Inequality	-----	A Human Values	-----	Gender
8	B. A. III Paper XIV Social Research Methods	VI	i) Techniques of Sociological Investigation ii) Computer Application and Statistics Utility of Social Research	Professional Ethics	-----	-----	-----
9	B. A. III Paper XV Social Disorganization in Cotemporary India	VI	Violence against women, Terrorisam in India, Problems of Naxalism in India	-----	Human Values	-----	Gender



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**Shri Muktanand College, Gangapur**  
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**Cross Cutting Issues**  
**Department of History**  
**B.A. (UG)**

Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
I	B. A. I Paper-I1 History of Modern Maharashtra	I	Socio-religious reforms, Early resistance to colonial rule, Ramoshi, bhill and Koli uprisings	-----	Human Values	-----	-----
2	B, A. II VI Paper VI History of Delhi Saltanat	IV	Religious cults: Nath , Mahanubhav and Warkari cults, bhakti movements in north India, Sikhism and sufisam, Caste system, rural and urban life	-----	Human Values	-----	-----
3	B. A. III Paper XI Women's struggle in modern India	V	I) Major issues and conception of women's problems in 19 <sup>th</sup> century: child marriage, sati tradition, life of widows, Bann on women education, secondary position of women in family and society. ii) Women and social struggle iii) Social reform movement and women's emancipation. iv) Women's participation: women in cast movement, women in tribal and peasant struggle, women in national struggle for independence v) Women and law	-----	Human Values	-----	Gender



Marathawada Shikshan Prasarak Mandal's  
**Shri Muktanand College, Gangapur**  
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**Cross Cutting Issues**  
**Department of Physics**  
**B.Sc. (UG)**

Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
1	B.Sc. IInd year Physics (Semester-III) Paper-V III Modern and Nuclear Physics	III	Energy released in fission and fusion, Atom bomb, Chain reaction, sources of stellar energy	-----	-----	Environment	-----
2	B.Sc. IIIrd year Physics Semester-VI Paper-XX Non-conventional energy sources and Optical fiber	VI	Non-conventional energy sources, Wind energy, Solar Photo-voltaic Systems	-----	-----	Environment, sustainability	-----



Marathawada Shikshan Prasarak Mandal's  
**Shri Muktanand College, Gangapur**  
 Dist.-Aurangabad  
**Cross Cutting Issues**  
**Department of Mathematics**  
**B. Sc. (UG)**

Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
1	B. Sc. 1 Year Paper I Geometry	I	Three-dimensional geometry	-----	-----	Environment	-----
2	B. Sc. I Year Paper —IV Integral Calculus	II	Integral, vector integration and its applications	-----	-----	Environment	-----
3	B. Sc. II Year Paper —VII and X Mechanics	III & IV	Forces acting on rigid body, center of Gravity	-----	-----	Environment	-----



Marathawada Shikshan Prasarak Mandal's  
**Shri Muktanand College, Gangapur**  
 Dist.-Aurangabad  
**Cross Cutting Issues**  
**Department of Chemistry**  
**B. Sc./M.Sc. (UG-PG)**

Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
1	B.Sc. I Paper No.I Inorganic Chemistry	I	Inorganic Chemistry Periodic Properties	Professional Ethics	-----	-----	-----
2	B.Sc. I Paper No.IV Physical Chemistry	II	Colloidal Sates Catalysis	Professional Ethics	-----	-----	-----
3	B.Sc. I Paper No. V Inorganic Chemistry	II	Nuclear Chemistry	Professional Ethics	-----	-----	-----
4	B. Sc. II Paper No. VII Organic Chemistry	III	Alcohols Phenols	Professional Ethics	-----	-----	-----
5	B. Sc. II Paper No. VIII Physical Chemistry	III	Thermodynamics	Professional Ethics	-----	Environment, Sustainability	-----
6	B. Sc. II Paper No. X Inorganic Chemistry	IV	Lanthanides Actinides	Professional Ethics	-----	Environment, Sustainability	-----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
7	B. Sc. II Paper No. XI	IV	Electrochemistry	Professional Ethics	-----	-----	-----
8	B.Sc. III Paper No.XVI Inorganic Chemistry	V	Bioinorganic Chemistry Chromatography	Professional Ethics	-----	Environment, Sustainability	-----
9	B.Sc. III Paper No.XVII Organic Chemistry	V	Organic Chemistry Synthetic Dyes and Drugs	Professional Ethics	-----	Environment, Sustainability	-----
10	B.Sc. III Paper No. XIII Physical Chemistry	VI	Physical Chemistry Nano Material Spectroscopy	Professional Ethics	-----	-----	-----
11	B.Sc. III Paper No. XIV Organic Chemistry	VI	Organic Chemistry Fats ,Oil Detergent	Professional Ethics	-----	Environment, Sustainability	-----
12	M.Sc. I Paper No. CHE-10I Analytical Chemistry	I	Chromatography Basic Separation Techniques	Professional Ethics	-----	Environment, Sustainability	-----
13	M.Sc. I Paper No CHE-102 Inorganic Chemistry	I	Reaction Mechanism of Transition Metal Complexes Inorganic Systems In biological systems	Professional Ethics	-----	Environment, Sustainability	-----
14	M.Sc. I Paper No. CHE-103 Organic Chemistry	I	Organic chemistry Stereo Chemistry	Professional Ethics	-----	-----	-----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
15	M.Sc. I Paper No CHE-104 Physical Chemistry	I	Classical Thermodynamics Surface Chemistry Electrochemistry	Professional Ethics	-----	Environment, Sustainability	-----
16	M.Sc. I Paper No. CHE-205 Spectroscopic Methods of Analysis	II	Spectroscopic Methods Of analysis	Professional Ethics	-----	-----	-----
17	M.Sc. I Paper No. CHE-206 Inorganic Chemistry	II	Inorganic Chemistry Chemistry Metal Carbonyl	Professional Ethics	-----	-----	-----
18	M.Sc. I Paper No. CHE-207 Organic Chemistry	II	Organic Chemistry	Professional Ethics	-----	-----	-----
19	M.Sc. I Paper No. CHE-208 Physical Chemistry	II	Quantum Chemistry Crystallography Photo Chemistry	Professional Ethics	-----	-----	-----
20	M.Sc. II Paper No-CHESC-313 Structural Elucidation by spectral method	III	Spectroscopic Methods NMR, IR, MASS	Professional Ethics	-----	-----	-----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
21	M.Sc. II Paper No- CHEO-314 Organic synthesis	III	Organic Synthesis	Professional Ethics	-----	-----	-----
22	M.Sc. II Paper No- X.CHEO-315 Asymmetric synthesis & Bio-Organic Chemistry	III	Bioinorganic Chemistry	Professional Ethics	-----	Environment, Sustainability	-----
23	M.Sc. II Paper No- CHEO-316 Photochemistry, Free Radicals & Pericyclic Reactions	III	Photo Chemistry Pericyclic Reaction	Professional Ethics	-----	-----	-----
24	M.Sc. II Paper No- CHEO-417 Organic Synthesis: Retrosynthetic Approach	IV	Organic Synthesis Retro Synthetic approach	Professional Ethics	-----	-----	-----
25	M.Sc. II Paper No- CHEO-418 Advanced Organic & Heterocyclic Chemistry	IV	Heterocyclic Chemistry	Professional Ethics	-----	-----	-----





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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
26	M.Sc. II Paper No- CHEO-419 Chemistry of Natural Products	IV	Chemistry of Natural Products	Professional Ethics	-----	Environment, Sustainability	-----
27	M.Sc. II Paper No. CHEO-420 Medicinal Chemistry	IV	Medicinal chemistry	Professional Ethics	-----	-----	-----



Marathawada Shikshan Prasarak Mandal's  
**Shri Muktanand College, Gangapur**  
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**Cross Cutting Issues**  
**Department of Analytical Chemistry**  
**B. Sc. (UG)**

Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
1	Analytical Chemistry Paper no: II, Course no : ACH-102, Name of course : B.Sc. F.Y.	I	Basic concepts in analytical chemistry, Environmental sustainability through good laboratory practices, Safety rules	-----	-----	Environment, Sustainability	-----
2	Analytical Chemistry Paper no: V, Course no : ACH-202, Name of course : B.Sc. F.Y	I	Classical and Spectral Methods of Analysis, Contemperment of analytical knowledge, Basics of volumetric gravimetric, complexometry and spectral analytical methods	Professional Ethics	-----	-----	-----
3	Analytical Chemistry Paper no: VIII, Course no : ACH-302, Name of course : B.Sc. S.Y	II	Advance Analytical Techniques, Basic of solvent extraction, Basic concepts of chromatographic techniques	Professional Ethics	-----	Environmental sustainability	-----
4	Analytical Chemistry Course no : ACH-402, Name of course : B.Sc. S.Y	II	Instrumental methods of analysis, Introduction to various methods of instrumental analysis, Contemperment of scientific knowledge on instrumental methods of analysis	Professional Ethics	-----	-----	-----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
5	Paper XVI, Analytical Chemistry, (B.Sc.III) ACH 502	V	Industrial Analysis, Microbiological Analysis, Biochemical Analysis	Professional ethics	-----	Environment & Sustainability	-----
6	Paper XX, Applied Analytical Chemistry-II (B.Sc.III) ACH 602	V	Introduction to feed analysis, Analysis of food and food products, Pharmaceutical analysis, Clinical Chemistry or Analysis	Professional ethics	-----	Environment & Sustainability	-----
7	Paper XV, Analytical Chemistry- (B.Sc.III)	V	I.R.- Spectroscopy, NMR- Spectroscopy, Mass Spectroscopy, Fluorescence Spectroscopy	Professional ethics	-----	Environment & Sustainability	-----
8	Paper XIX Applied Analytical Chemistry-I (B.Sc. III)	VI	Inorganic analysis, Analysis of Cement & Coal, Analysis of fertilizers, Acid raid, Analysis of Soil	Professional ethics	-----	Environment & Sustainability	-----
9	Paper I Fundamentals of Analytical Chemistry (B.Sc. I)	VI	Scope and Importance of Analytical Chemistry, Sampling of analytical Samples, Reagents Solvents and their Classification, Working in Analytical Laboratory, Digital electronics and Computers.	Professional ethics	-----	Environment & Sustainability	-----



Marathawada Shikshan Prasarak Mandal's  
**Shri Muktanand College, Gangapur**  
 Dist.-Aurangabad  
**Cross Cutting Issues**  
**Department of Music**  
**B.A. (UG)**

Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
1	B.A. Paper 1 <sup>st</sup> (Theory) Indian classical Music	I	<b>Notation writing of Vilimbit Khayal-</b> 1. Raag Yaman, 2. Bhoopali, 3. Bhairaw, 4. Bihag	Professional ethics	Human Values	Sustainability	
			<b>Notation writing of Chota khayal -</b> 1. Raag Durga, 2. Khamaj, 3. Allahaiya Bilawal, 4. Brindawani Sarang, 5. Bhirawi, 6. Kafi	Professional ethics	Human Values	Sustainability	gender
			<b>Taal and their laykaris-</b> 1. Teental, 2. Ektaal, 3. Dadra, 4. Zaptaal	Professional ethics	Human Values		
			<b>Definations of Technical Terms (Musical)</b>	Professional ethics	Human Values		gender
			<b>Biographies of</b> 1. Tansen, 2. Swami haridas, 3. Amir Khusro, 4. Pt. Kumar Gandharwa, 5. Pt. Jaydev, 6. Pt. Bhimsen Joshi	Professional ethics	Human Values	Sustainability	Gender



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
2	B.A. 1 <sup>st</sup> Year Paper 2 <sup>nd</sup> (Theory) Indian classical music	I	<b>Detail study of Taal and their laykaris-</b> 1. Keherwa, 2. Dhamar, 3. Rupak, 4. Chautal	Professional ethics	Human Values	-----	Gender
			<b>Short notes on</b> Sargamgeet, Lakshangeet, Dhrupad, Dhamar, Tarana, Chatrang, Bhajan	Professional ethics	Human Values	-----	Gender
			<b>Biographies of -</b> 1. Master Krishnrao Phulamrikar 2. P.t Anant Hari Gunjkar 3. Mahakvi Wamandada Kardak, 4. Dr. Gulam Rassol Khan	Professional ethics	Human Values	It deals with Sustainability	Gender
			<b>History and Development of Indian classical Music Ancient period to 1000 A.D.</b>	Professional ethics	human values	It deals with Sustainability	Gender
3	B.A. 1 <sup>st</sup> year Paper 3 <sup>rd</sup> (Practical) Indian classical music	I	<b>Ability to sing a Vilimbit Khayal with aalap and tana &amp; bahlawe-</b> Raag Yaman, Bhoopali, Bhairaw, Bihag	Professional ethics	human values	-----	Gender
			<b>Ability to sing a Chota khayal with aalap and tana -</b> Raag Durga, khamaj, Allahaiya bilawal, Brindawani Sarang Bhairawi, Kafi	Professional ethics	human values	-----	Gender
			<b>Taal and their laykaris -</b> Teental, Ektaal, Dadra, Zaptaal, Keharwa, Dhamar, Rupak, Chautaal	Professional ethics	human values	Environment & Sustainability	Gender
			<b>Ability to sing a folk song &amp; light singing form</b>	Professional ethics	human values	Environment & Sustainability	Gender



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
4	B.A. IInd Year Paper 4 <sup>th</sup> (Theory) Indian classical Music	III	<b>Notation writing of vilambit khayal</b> 1. Malkauns 2. Bageshri 3. Kedar 4. Bhimpalasi	Professional ethics	human values	Sustainability	Gender
			<b>Notation writing of chota khayal</b> 1. Hameer 2. Deshkar 3. Desh 4. Jaunpuri	Professional ethics	human values	-----	----
5	B.A. IInd year Paper 5 <sup>th</sup> (Theory) Indian classical Music	III	<b>Defination of technical terms (Musical)-</b> Vaggeyakar, Gandharwa, Pandit, Nayak, Gayak, Vadam, Sangeet shastrakar, Sangeet Shikashak, Kawaal, Astayi Gayak	Professional ethics	human values	Sustainability	Gender
			<b>Biographies of Sadarang – Adarang,</b> Pt. Bharatmuni, Pt. Sharangdev, Pt. Vyankatmakhi	Professional ethics	human values	Sustainability	Gender
			<b>Detail study of Taal and their laykaris-</b> 1. Teentaal 2. Tilwada, 3. Sooltaal, 4. Tevra	Professional ethics	human values	-----	Gender
			<b>Defination of technical terms (Musical)-</b> Alpatva, Nyaas, Aahat naad-Anahat naad, Raag jaaties, Apanyaas, Sanyaae, Vinyaas Mandra Madhya taar saptak	Professional ethics	human values	-----	Gender



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<b>General information about singing forms</b> 1. Khayal 2. Vilambit khayal 3. Chota khayal 4. Hori 5. Dadra 6. Sadra	----	human values	----	Gender
6	B.A. IInd year Paper 5 <sup>th</sup> (Theory) Indian classical Music	III	<b>History and development of Indian music from 100AD to 1500 AD</b>	Professional ethics	human values	-----	Gender
			<b>Short notes on –</b> Meend, Andalon, Kan swar, Gamak, Aaalap, Taan, Shuddha taan Kut taan, Vakra taan, Achark taan, Sapaat taan	Professional ethics	human values	----	Gender
7	B.A. IInd Year Paper 6 <sup>th</sup> (Practical) Indian classical Music	III	<b>Ability to sing vilambit khayal and their aalap tana &amp; bihlawe</b> 1. Malkauns 2. Bageshri 3. Kedar 4. Bhimpalasi	Professional ethics	human values	----	Gender
			<b>Ability to sing a chota khayal and their aalap tana</b> 1. Hameer 2. Deshkar 3. Desh 4. Jaunpuri	----	human values	-----	Gender
			<b>Taal and their laykaris –</b> 1. Teentaal 2. Tilwada, 3. Sooltaal, 4. Tevra	Professional ethics	human values	----	----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<b>Ability to sing a Dhrupad dhamar and tarana</b>	Professional Ethics	----	----	----
			<b>Ability to sing a light music and folk form</b>	Professional Ethics	----	----	----
8	B.A. Paper 1 <sup>st</sup> (Theory) Indian classical music	I	<b>Notation writing of Vilimbit Khayal-</b> 1. Raag Yaman, 2. Bhoopali, 3. Bhiraw, 4. Bihag	Professional Ethics	Human Values	----	----
			<b>Notation writing of Chota khayal-</b> 1. Raag Durga, 2. Khamaj, 3. Allahaiya bilawal, 4. Brindawani Sarang, 5. Bhairawi, 6. Kafi	Professional Ethics	Human Values	Sustainability	Gender
			<b>Taal and their laykaris-</b> 1. Teental,, 2. Ektaal, 3. Dadra, 4. Zaptaal	Professional Ethics	Human Values	----	----
			<b>Definations of technical terms (Musical)</b>	Professional Ethics	Human Values	-----	Gender





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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<b>Biographies of</b> 1. Tansen, 2. Swami haridas, 3. Amir Khusro, 4. Pt. Kumar Gandharwa, 5. Pt. Jaydev, 6. Pt. Bhimsen Joshi	Professional Ethics	Human Values	Sustainability	Gender
9	B.A. Paper 1 <sup>st</sup> (Theory) Indian classical music	II	<b>Detail study of Taal and their laykaris.</b> 1. Keherwa, 2. Dhamar, 3. Rupak, 4. Chautaal	Professional Ethics	Human Values	----	Gender
			<b>Short notes on</b> Sargamgeet, Lakshangeet, Dhrupad, Dhamar, Tarana, Chatrang, Bhajan	Professional Ethics	Human Values	-----	Gender
			<b>Biographies of –</b> 1. master Krishnrao Phulambrikar, 2. Pt. Anant Hari Gunjkar, 3. Mahakvi Wamandada Kardak, 4. Dr. Gulam Rassol Khan	Professional Ethics	Human Values	Sustainability	Gender
			<b>History and Development of Indian classical Music Ancient period to 1000 A.D.</b>	Professional Ethics	Human Values	Sustainability	Gender
10	B.A. 1 <sup>st</sup> Year Paper 2 <sup>nd</sup> (Theory) Indian classical music	II	<b>Ability to sing a Vilimbit Khayal with aalap and tana &amp; behlawe-</b> 1. Raag Yaman, 2. Bhoopali, 3. Bhiraw, 4. Bihag	Professional Ethics	Human Values	-----	Gender



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
11	<i>B.A. IInd year Paper 4<sup>th</sup> (Theory) Indian classical Music</i>	II	<b>Ability to sing a Chota khayal with aalap and tana-</b> 1. Raag Durga, 2. Khamaj, 3. Allahaiya bilawal, 4. Brindawani Sarang, 5. Bhairawi, 6. Kafi	Professional Ethics	Human Values	-----	Gender
			<b>Taal and their laykaris -</b> 1. Teentaal, 2. Ektaal, 3. Dadra, 4. Zaptaal, 5. Keharwa, 6. Dhamar, 7. Rupak, 8. Chautaal	Professional Ethics	Human Values	-----	Gender
			Ability to sing a folk song & light singing form	Professional Ethics	Human Values	-----	Gender
		III	<b>Notation writing of vilambit khayal</b> 1. Malkauns 2. Bageshri 3. Kedar 4. Bhimpalasi	Professional Ethics	Human Values	Sustainability	Gender
			<b>Notation writing of chota khayal</b> 1. Hameer 2. Desgjar 3. Desh 4. Jaunpuri	Professional Ethics	Human Values	Sustainability	Gender



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
		III	<b>Defination of Technical Terms (Musical)-</b> Vaggeyakar, Gandharwa, Pandit, Nayak, Gayak, Vadaak, Sangeet shastrakar, Sangeet shikshak, Kawaal, Astayi Gayak	Professional Ethics	Human Values	Sustainability	Gender
			<b>Biographies of Sadarang-</b> Adarang, Pt. Bharatmuni, Pt. Sharangdev, Pt. Vuankatmakhi	Professional Ethics	Human Values	Sustainability	Gender
			<b>Detail study of Taal and their laykaris-</b> 1. Teentaal 2. Tilwada, 3. Sooltaal, 4. Tevra	Professional Ethics	Human Values	-----	Gender
			<b>Defination of technical terms (Musical)-</b> Alpatva, Nyaas, Aahat naad-Anahat naad, Raag jaaties, Apanyaas, Sanyaas, Vinyaas mandra Madhya taar saptak	Professional Ethics	Human Values	-----	Gender
			<b>General information about singing forms</b> 1. Khayal 2. Vilambit khayal 3. Chota khayal 4. Hori 5. Dadra Sadra	-----	Human Values	-----	Gender



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
12	B.A. 1 <sup>st</sup> year Paper 3 <sup>rd</sup> (Practical) Indian classical music	I	<b>History and development of Indian music from 1001AD to 1500 AD</b>	Professional Ethics	Human Values	----	Gender
			<b>Short notes on –</b> Meend, Andalon, Kan swar, Gamak, Aalap, Taan, Shuddha taan, Kut taan, Vakra taan, Acharak taan, Sapaat taan	Professional Ethics	Human Values	-----	Gender
			<b>Ability to sing vilambit khayal and their aalap tana &amp; behlawe</b> 1. Malkauns 2. Bageshri 3. Kedar Bhimpalasi	Professional Ethics	Human Values	----	Gender
			<b>Ability to sing a chota khayal and their aalap tana</b> 1. Hameer 2. Deshkar 3. Desh Jaunpuri	-----	Human Values	-----	Gender
			<b>Taal and their laykaris-</b> 1. Teentaal, 2. Tilwada, 3. Sooltaal, Tevra	Professional Ethics	Human Values	----	----
			<b>Ability to sing a Dhrupad dhamar and tarana</b>	Professional Ethics	----	-----	-----
			<b>Ability to sing a light music and folk form</b>	Professional Ethics	----	----	----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
13	B.A. IInd year Paper 4 <sup>th</sup> (Theory) Indian classical Music	III	<b>Notation writing of Vilimbit Khayal-</b> 1. Raag Yaman, 2. Bhoopali, 3. Bhiraw, 4. Bihag	Professional Ethics	Human Values	Sustainability	----
			<b>Notation writing of Chota khayal-</b> 1. Raag Durga, 2. Khamaj, 3. Allahaiya bilawal, 4. Brindawani Sarang, 5. Bhairawi, 6. Kafi	Professional Ethics	Human Values	Sustainability	Gender
			<b>Taal and their laykaris-</b> 1. Teental,, 2. Ektaal, 3. Dadra, 4. Zaptaal	Professional Ethics	Human Values	-----	-----
14	B.A. IInd year Paper 5 <sup>th</sup> (Theory) Indian classical Music	IV	<b>Definations of technical terms (Musical)</b>	Professional Ethics	Human Values	----	Gender
			<b>Biographies of</b> 1. Tansen, 2. Swami haridas, 3. Amir Khusro, 4. Pt. Kumar Gandharwa, 5. Pt. Jaydev, 6. Pt. Bhimsen Joshi	Professional Ethics	Human Values	Sustainability	Gender
			<b>Detail study of Taal and their laykaris.</b> 1. Keherwa, 2. Dhamar, 3. Rupak, 4. Chautaal	Professional Ethics	Human Values	----	Gender



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<b>Short notes on</b> Sargamgeet, Lakshangeet, Dhrupad, Dhamar, Tarana, Chatrang, Bhajan	Professional Ethics	Human Values	----	Gender
			<b>Biographies of -</b> 1. master Krishnrao Phulambrikar, 2. Pt. Anant Hari Gunjkar, 3. Mahakvi Wamandada Kardak, 4. Dr. Gulam Rassol Khan	Professional Ethics	Human Values	Sustainability	Gender
15	B.A. IInd year Paper 5 <sup>th</sup> (Theory) Indian classical Music	IV	<b>History and Development of Indian classical Music Ancient period to 1000 A.D.</b>	Professional Ethics	Human Values	Sustainability	Gender
16	B.A. IInd year Paper 6 <sup>th</sup> (Practical) Indian classical Music	III	<b>Ability to sing a Vilimbit Khayal with aalap and tana &amp; behlawe-</b> 1. Raag Yaman, 2. Bhoopali, 3. Bhiraw, 4. Bihag	Professional Ethics	Human Values	-----	Gender
			<b>Ability to sing a Chota khayal with aalap and tana-</b> 1. Raag Durga, 2. Khamaj, 3. Allahaiya bilawal, 4. Brindawani Sarang, 5. Bhairawi, 6. Kafi	Professional Ethics	Human Values	-----	Gender
			<b>Taal and their laykaris -</b> 1. Teentaal, 2. Ektaal, 3. Dadra, 4. Zaptaal, 5. Keharwa, 6. Dhamar, 7. Rupak, 8. Chautaal	Professional Ethics	Human Values	Sustainability	Gender



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
			Ability to sing a folk song & light singing form	Professional Ethics	Human Values	Sustainability	Gender
			<b>Notation writing of vilambit khayal</b> 1. Malkauns 2. Bageshri 3. Kedar 4. Bhimpalasi	Professional Ethics	Human Values	Sustainability	Gender
17	B.A. T.Y. Fifth sem Paper IX (Theory) Indian classical music	V	<b>Notation writing of Vilimbit Khayal-</b> 1. Miya ki Todi, Shuddha Kalyan	Professional Ethics	Human Values	Sustainability	-----
			<b>Notation writing of Chota khayal-</b> 1. Chayanat Tilang	Professional Ethics	Human Values	Sustainability	Gender
			<b>Taal and their laykaris-</b> 1. Aada Choutal Deepachandi	Professional Ethics	Human Values	-----	----
			<b>Detail study of Shruti &amp; Raag Vargikaran (Musical)</b>	Professional Ethics	Human Values	-----	Gender
			<b>Biographies of</b> 1. Pt. Jasaraaj 2. Dr. Prabha Atre	Professional Ethics	Human Values	Sustainability	Gender
18	B.A. TY Paper XI (Theory) Indian classical music	VI	<b>Notation writing of Vilimbit Khayal-</b> 1. Puriya Dhanashree, 2. Mulatani, 3. Darabari Kanada	Professional Ethics	Human Values	Sustainability	Gender
			<b>Notation writing of Chota khayal-</b> 1. Sohani 2. Hindol 3. Tikal Kamod	Professional Ethics	Human Values	Sustainability	Gender



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<b>Detail study of Taal and their laykaris-</b> 1. Pashto 2. Tilawada 3. Panjabi	Professional Ethics	Human Values	Sustainability	Gender
			<b>Detail study of Gharanas</b> 1. Gwalior 2. Kirana Patiyala	Professional Ethics	Human Values	-----	Gender
			<b>Detail study of Granthas-</b> 1. Natyashastra- Pt. Bharatmuni Sangeet Ratnakar Pt. Sharangadeo	Professional Ethics	Human Values	Sustainability	Gender
			<b>History and Development of Indian classical Music 1500 A.D. to Morden Age.</b>	Professional Ethics	Human Values	Sustainability	Gender
19	B.A. TY Paper X & XII (Practical) Indian classical music	VI	<b>Ability to sing a Vilimbit Khayal with aalap and tana &amp; bihlawe-</b> 1. Miya ki todi 2. Shuddha Kalyan 3. Puriya Dhanashree 4. Mulatani Darbari kanada	Professional Ethics	Human Values	-----	Gender
			<b>Ability to sing a Chota khayal with aalap and tana-</b> 1. Chayanat 2. Tilang 3. Sohani 4. Hondol Tilak kamod	Professional Ethics	Human Values	-----	Gender
			<b>Taal and their laykaris-</b> 1. Aada Choutal 2. Deepachandi 3. Pashto 4. Tilawada Panjani	Professional Ethics	Human Values	-----	Gender





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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
			Ability to sing a folk song & light singing form Dadara / Thumari / Bhajan / bhavgeet	Professional Ethics	Human Values	Sustainability	Gender
20	B.A. TY Paper XIII (Theory) Indian classical Music	V	<b>Notation writing of vilambit khayal</b> 1. Marava 2. Miya Malhar Gaudsarang	Professional Ethics	Human Values	Sustainability	Gender
			<b>Notation writing of chota khayal</b> 1. Bahar 2. Purvi Adana	Professional Ethics	Human Values	-----	-----
			<b>Detail study of Gram &amp; Murchhana</b> <b>Short notes-</b> 1. Powada 2. Bharud Kirtan	Professional Ethics	Human Values	Sustainability	Gender
			<b>Biographies of</b> 1. Ustad Amir Khan Pt. Hariprasad Chourasiya	Professional Ethics	Human Values	Sustainability	Gender
			<b>Detail study of Taal and their laykaris-</b> 1. 2/3 2. 3/2 <b>Talas-</b> 1. Rudra 2. Pancham Sawari Khemata	Professional Ethics	Human Values	-----	Gender



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
	B.A. TY Paper XV (Theory) Indian classical Music	V	<b>Notation writing of vilambit khayal-</b> 1. Ramkali 2. Lalit 3. Jaijaiwanti  <b>Notation writing of chota khayal-</b> 1. Kamod 2. Gaudmalhar Basant	Professional Ethics	Human Values	-----	Gender
<b>Detail study of taal &amp; laykaris-</b> 1. 3/4 2. 4/3  <b>Taalas</b> 1. Rupak-tevara 2. Deepachandi-zumara 3. Teental-panjabi			-----	Human Values	-----	Gender	
<b>Detail study of gharanas</b> 1. Jaipur 2. Agra 3. Mewati			Professional Ethics	Human Values	-----	Gender	
<b>Biographies of</b> 1. Pt. Bharatmuni 2. Pt. Sharangadeo			Professional Ethics	Human Values	-----	Gender	
21	B.A. TY Paper XIV & XVI (Practical) Indian classical Music	VI	<b>Ability to sing vilambit khayal and their aalap tana &amp; behlawa</b> 1. Marava 2. Miya malhar 3. Gaudsarang 4. Ramkali 5. Lalit 6. Jaijaiwanti	Professional Ethics	Human Values	-----	Gender



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<b>Ability to sing a chota khayal and their aalap tana</b> 1. Bahar 2. Purvi 3. Adana 4. Kamod 5. Gaudmalhar 6. Basant	-----	Human Values	-----	Gender
			<b>Taal and their laykaris-</b> 1. Rudra 2. Pancham sawari 3. Khemata 4. Rupak-tewara 5. Deepchamdi-zumara 6. Teentaal-panjabi	Professional Ethics	Human Values	-----	----
			<b>Ability to sing a Dhrupad dhamar and tarana</b>	Professional Ethics	-----	-----	----
			<b>Ability to sing a light music and semi classical form</b>	Professional Ethics	-----	----	----



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**Cross Cutting Issues**  
**Department of Geography**  
**B.A (UG)**

Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
1.	B.A. I, Paper - I	I	Lithospheres: Interior of the Earth, Wegher's Continental Drift Theory, Isoctacy and plate Tectonic theories	----	----	Environment & Sustainability	----
2.	B.A. I, Paper - I	I	Earth Movements: Vertical and Horizontal, Process of Folding causes and effect, process of Faulting, Causes and effect. Volcanoes and Earthquakes.	----	----	Environment & Sustainability	----
3.	B.A. I, Paper - I	I	Rocks: Classification of rocks on the basis of Origin. Properties of different rocks.	----	----	Environment & Sustainability	----
4.	B.A. I, Paper - I	I	Introduction, Definition, Nature and Scope of Human Geography Braches of Human Geography.	----	----	Environment & Sustainability	----
5.	B.A. I, Paper - I	I	Man, and Environment relationship Types of Environment, Concept of Determinism and Possibilism, Stop & Go deterministic Approach	----	----	Environment & Sustainability	----
6.	B.A. I, Paper - I	I	Physical and Social Profile of Racial groups, Ethnic groups, Tribal groups in World & India, Eskimoe, Bushmen, Masai, Gonds, Gujars.	----	Human Values	Environment & Sustainability	----
7.	B.A. I, Paper - I	I	Human Settlement: - Types, Forms Patterns and Functional classification	----	Human Values	----	----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
8.	B.A. I, Paper - I	I	Representation of Landforms by Contours, Conical hill, Plateau, Cliff, Waterfall, U-Shaped Valley, 'V' Shaped Valley, Pass, Ridge.	----	----	Environment, Sustainability	----
9.	B.A. I, Paper - IV	II	Concept of landforms, Evolution and types of landforms, Concept of Erosional cycle	----	----	Environment, Sustainability	----
10.	B.A. I, Paper - IV	II	Weathering:- Types and classification of Weathering Mechanical, Chemical and biological. Soil formation	----	----	Environment, Sustainability	----
11.	B.A. I, Paper - IV	II	Geomorphic agents and processes. Erosion, Transportation, Deposition, Landforms produced by River, Winds and Sea waves	----	----	Environment, Sustainability	----
12.	B.A. I, Paper - IV	II	Applied Geomorphology Land form produced by Glacier and Underground water, Geomorphology and Settlement, Geomorphology & Land use & Geomorphology & Resources.	----	----	Environment, Sustainability	----
13.	B.A. I, Paper - V	II	Climate, Drainage, Soil and Natural Vegetation of Maharashtra	----	----	Environment, Sustainability	----
14.	B.A. I, Paper - V	II	Agriculture: - Cropping Pattern, Major Crops: Jowar, Wheat, Rice, Cotton, Sugarcane, Oilseeds & Pulses-Geographical Condition, Production & distribution.	----	----	Environment, Sustainability	----
15.	B.A. I, Paper - V	II	Industries: - Cotton and textile, Industries, Sugar Industries. Transpiration: - Road and Railway transport.	Professional Ethics	----	Environment, Sustainability	----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
	B.A. 1 <sup>st</sup> , Paper No. - VI	II	Human Settlement, Drainage	Professional Ethics	----	Environment, Sustainability	----
	B.A. 1 <sup>st</sup> , Paper No. - VI	II	Study of Weather Instruments: - Thermometer, Simple, Minimum & Maximum, Dry & Wet Bulb, Rain gauge, Wind Vane, Cup Anemometer, Hygrometer, Aneroid Barometer.	----	----	Environment, Sustainability	----
	B.A. II, Paper - VII	III	<b>Weather and Climate</b> - Definition, nature and scope of Climatology, Significance of Climatology, Composition & structures of atmosphere, weather & Climate	----	----	Environment, Sustainability	----
	B.A. II, Paper - VII	III	Heat Budget of the Earth, Factors affecting the distribution of Solar energy, Distribution of Temperature - Vertical	----	----	Environment, Sustainability	----
	B.A. II, Paper - VII	III	Atmospheric Pressure and Winds- Evaporation and Condensation, Hydrological cycle, Types of precipitation, World pattern of rainfall. regional and seasonal distribution, Air Masses and Fronts: Concept, Classification and properties. Atmospheric disturbance: Tropical and Temperate cyclones: thunderstorms and tornadoes.	----	----	Environment, Sustainability	----
	B.A. II, Paper - VII	III	Role of Climate in human life: - Atmosphere pollution & global warming, general causes, consequences and measures of control.	----	----	Environment, Sustainability	----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
	B.A. II, Paper - VIII	III	<b>Population Geography</b> - Definition, nature, scope and Significance, Sources of population data	----	Human Values	Environment, Sustainability	----
	B.A. II, Paper - VIII	III	Distribution of population	----	Human Values	Environment, Sustainability	----
	B.A. II, Paper - VIII	III	<b>Composition of Population</b> - Age and sex composition, rural- urban composition, Economic composition; determinates, World regional patterns; Composition, of population in India	----	Human Values	Environment, Sustainability	----
	B.A. II, Paper - IX	III	Earth, shape, size, area and great circle, co-ordinate system, plane spherical latitude, longitude direction and distance map design	----	----	Environment, Sustainability	----
	B.A. II, Paper - X	IV	<b>Introduction of Oceanography</b> - Definition, Nature and Scope, Surface configuration of Ocean floors.	----	----	Environment, Sustainability	----
	B.A. II, Paper - X	IV	<b>Submarine Relief</b> - General idea of submarine relief- Continental shelf, Continental slope, Abyssal plains, Oceanic trenches and deeps, Hypsographic Curve, Relief of Atlantic, Pacific and Indian Oceans.	----	----	Environment, Sustainability	----
	B.A. II, Paper - X	IV	<b>Salinity and Temperature of Oceanic Water</b> -Salinity of ocean water, its meaning, causes of salinity, Factors affecting on salinity of oceanic water, Distribution of salinity in the World. Factors affecting the temperature of ocean water, Distribution of temperature in ocean water	----	----	Environment, Sustainability	----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
	B.A. II, Paper - X	IV	<b>Marine Deposits and Coral Reefs-</b> Ocean deposits- Shallow Sea deposits, Deep	----	----	Environment, Sustainability	----
			Sea deposits, Types of Corals. Ocean as a storehouse of resources for the future.	----	----	Environment, Sustainability	----
	B.A. II Paper - XI	IV	<b>Settlement Geography</b> -Nature, scope and content. Definition of rural and urban Settlements, merits and limitations.	----	----	Environment, Sustainability	----
	B.A. II Paper - XI	IV	Silent features of human settlements in India	----	Human Values	----	----
	B.A. II Paper - XII	IV	Climograph	----	----	Environment, Sustainability	----
	B.A. III Paper - XVI	V	Nature, scope and recent developments of Industry in Maharashtra. Elements and factors of localization of Industries	Professional Ethics	----	Environment, Sustainability	----
	B.A. III Paper - XVI	V	Distribution and spatial pattern of Industries in Maharashtra. 1. Cotton and Textile Industries 2. Petro chemical Industries 3. Sugar cane Industries 4. Automobile Industries	Professional Ethics	----	Environment, Sustainability	----
	B.A. III Paper - XVI	V	Industrial belt in Maharashtra and their Characteristics, Impact of industries on economic development of Maharashtra	Professional Ethics	----	Environment, Sustainability	----





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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
	B.A. III Paper - XVI	V	Industrial belt in Maharashtra and their Characteristics, Impact of industries on economic development of Maharashtra	Professional Ethics	----	Environment, Sustainability	----
	B.A. III Paper - XVI	V	Role of globalization Industrial sector, shifting of industries and its impact on the urban fringe, Changing industrial policy in Maharashtra	Professional Ethics	----	Environment, Sustainability	----
	B.A. III Paper - XVII	V	Significance of natural resources	----	----	Environment, Sustainability	----
	B.A. III Paper - XVII	V	Classification of Resources- Renewable and Non-renewable Resources: Biotic: forest Wildlife, livestock, fisheries agricultural crops abiotic-land, water and minerals	----	----	Environment, Sustainability	----
	B.A. III Paper - XVII	V	Distribution and utilization of water, mineral and Energy resources	----	----	Environment, Sustainability	----
	B.A. III Paper - XVII	V	Conservation of major resources-Soil, Water, fore stand minerals.	----	----	Environment, Sustainability	----
	B.A. III Paper - XIX	VI	Nature, scope significance & development of Agricultural geography. Origin and dispersal of Agricultural in India	----	----	Environment, Sustainability	----
	B.A. III Paper - XIX	VI	Agriculture in India: Agricultural landuse, cropping Pattern, Regional pattern of productivity in India. Agricultural policy in India	Professional Ethics	----	Environment, Sustainability	----
	B.A. III Paper - XIX	VI	Distribution and production of major crops in India, Green Revolution in India	----	----	Environment, Sustainability	----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
	B.A. III Paper - XIX	VI	Distribution and production of major crops in India, Green Revolution in India	----	----	Environment, Sustainability	----
	B.A. III Paper - XX	VI	Definition Nature and scope of Natural Calamities, Earthquake, and volcano, causes and effect of Earthquake & volcano, world distribution of earthquake and volcano.	----	----	Environment, Sustainability	----
	B.A. III Paper - XX	VI	Drought and floods 1. Meteorological drought 2. Hydrological drought. 3. Agricultural drought. Causes and effects of drought, drought-prone-areas, Flood cause and effects, Biological Hazards	----	----	Environment, Sustainability	----
	B.A. III Paper - XX	VI	Global warming and green House effects, Ozone deflation, Pollution Types, (Air, Water, and Soil)	----	----	Environment, Sustainability	----
	B.A. III Paper - XXII	VI	Meaning & Scope of Urban Geography, Problems of Urban Development Population Explosion, Laks of Amenities (Water, Transprot), Land use management Slum Areas, Housing Problems, Unemployment, Environmental Problems	----	----	Environment, Sustainability	----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
	B.A. III Paper - XXII	VI	Meaning & Scope of Urban Geography, Problems of Urban Development Population Explosion, Laks of Amenities (Water, Transprot), Land use management Slum Areas, Housing Problems, Unemployment, Environmental Problems	----	----	Environment, Sustainability	----
	B.A. III Paper - XXII	VI	Nature, Scope and significance of Biogeography, Elements of Plant geography, distribution of forests, successions in newly Formed landforms, Examples from flood plains and Glacial fore fields, Zoogeography and its Environmental Relationship Ecosystem forms and function. National forest Policy of India	----	----	Environment, Sustainability	----
	B.A. III Paper - XV	VI	Theories of Urban Growth	----	----	Environment, Sustainability	----



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**Cross Cutting Issues**  
**Department of Botany**

**B. Sc. (UG-PG)**

Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
1	B.Sc. IInd Year III Semester Paper -X Plant Ecology	III	Plant and environment: A) Climatic factors — a) Light as an ecological factor, global radiation and photosynthetically active radiation (02) b) Temperature as an ecological factor (02) c) Water as an ecological factor, physicochemical properties of water (03) B) Edaphic factor — Soil formation -soil profile, physicochemical properties of soil, major soil types of India, soil erosion and soil conservation Phytogeography: (03) Biogeographical regions of India, vegetation types of India Ecosystem: structure -biotic and abiotic components, food chain, food web, ecological pyramids, energy flow, biogeochemical cycles-nitrogen and phosphorus.	-----	-----	Environment, Sustainability	-----
2	B.Sc. Illrd Year VI Semester Paper-XXI, Genetics and Biotechnology	VI	Sex Determination in Human And Detection of genetic diseases — amniocentesis Genetic counselling	-----	-----	-----	Gender
3	M.Sc. 1st Paper no 410 Research methodology	I	Unit III Ethical and Legal Issues of Research	Professional ethics	-----	-----	-----



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**Cross Cutting Issues**  
**Department of Zoology**  
**B. Sc. (UG)**

Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
1	B.Sc. III year Paper XV Ecology	V	Definition, basic concept, terminology used in ecology.	-----	-----	Environment, Sustainability	-----
2	B.Sc. III year Paper XV Ecology	V	<b>Abiotic environmental factors.</b> -Temperature; Concept, temperature fluctuation in different environment. Range of temperature tolerance, effect of temperature on animals, Thermal adaptation. -Light-Concept, Light variation in different environment, effect of light on animals. -Adaptation to salinity and moisture	-----	-----	Environment, Sustainability	-----
3	B.Sc. III year Paper XV Ecology	V	<b>Biotic environmental factors</b> 1. Composition: Definition, types, intraspecific and interspecific composition. 2. Predation: - Definition, characteristics of predation. 3. Commensalisms: -Definition and types with examples. 4. Mutualism: - Definition and example. 5. Parasitism: - Definition and types with examples.	-----	-----	Environment, Sustainability	-----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
4	B.Sc. III year Paper XV Ecology	V	<b>Population</b> 1. definition and basic concepts 2. Characteristics of population; Density, Natality, Mortality, Dispersion and Age distribution. a. Population growth. b. Population regulation	-----	-----	Environment, Sustainability	-----
5	B.Sc. III year Paper XV Ecology	V	<b>Community</b> Definition, basic concept and types. a. Structure of community; producer, consumers and decomposers. b. Characters; ecological niche, diversity, abundance, dominance, ecotone, edge effect. c. Community succession; example of succession and climax	-----	-----	Environment, Sustainability	-----
6	B.Sc. ill year Paper XV Ecology	V	<b>Ecosystem</b> Definition, concept and types. i) Components of ecosystem, ii) Dynamics of ecosystem: - primary production, secondary production, food chain, food web, tropic level, energy of flow, ecological pyramids. <b>Brief introduction to major ecosystems: -</b> Marine ecosystem, Pond ecosystem, Forest ecosystem and Desert ecosystem.	-----	-----	Environment, Sustainability	-----



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**Cross Cutting Issues**  
**Department of Computer Science**  
**B. Sc. (UG)**

Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
1	BCA III year Paper CA505T Ethical Hacking	V	<ul style="list-style-type: none"> <li>• Email Hacking Mobile Hacking</li> <li>• Penetration Testing</li> </ul>	Professional Ethics	-----	-----	-----
2	BSc (Computer Science) III Paper CS608-T Ethics and Cyber Law	VI	<ul style="list-style-type: none"> <li>■ Cyber Laws</li> <li>• Law of Digital Contracts</li> <li>• Cyber Crimes and Cyber Laws</li> <li>f. Information Technology Act 2000</li> <li>Cyber Law</li> </ul>	Professional Ethics	-----	-----	-----
3	B.Sc. Optional Computer Science III Paper CS020 Ethics and Cyber Law	VI	<ul style="list-style-type: none"> <li>• Cyber Laws</li> <li>• Law of Digital Contracts</li> <li>• Cyber Crimes and Cyber Laws</li> <li>■ Information Technology Act 2000</li> <li>Cyber Law</li> </ul>	Professional Ethics	-----	-----	-----
4	M.Sc. I CSC402 Research Methodology	II	<ul style="list-style-type: none"> <li>• Research design Ethics</li> </ul>	Professional	-----	-----	-----
5	M.Sc. I CSC408 Technical Report writing	II	<ul style="list-style-type: none"> <li>• Research design &amp; Research Ethics</li> </ul>	Professional Ethics	-----	-----	-----



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**Cross Cutting Issues**  
**Department of Commerce**  
**B. Com./M.Com. (UG-PG)**

Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
1	B. Com First Year Paper: I Financial Accounting	I & II	Meaning and Introduction of accountancy and Book- Keeping, Depreciation, Hire purchase System, Royalty Accounts, Accounting Standards, Departmental Accounts, Procedure of Consignment accounts	Professional Ethics	Human values.	-----	-----
2	B. Com First Year Paper: I Business Mathematics & Statistics	I & II	Importance of Business Statistics, Types of Data collection; Primary, Methods of Sampling ; Enumeration, Measures of Central Tendency, Measures of skewness, Dispersion , Correlation ,Regression Analysis, Coefficient of Standard Deviation so on.	Professional Ethics	Human values.	-----	-----
3	B. Com First Year Paper-III Business & Industrial Economics (Core) Sem-I Sem II: Business Organization Management	I & II	Characteristics and Scope of Economics, Theory and Principles of Consumer Behavior, Indifference Curve Analysis, and Elasticity of Demand: Demand Analysis, Market Structures, and Factor Pricing. Foundation of Business, Organizational Structure, Leadership Qualities, functional Areas of Management	Professional Ethics	Human Values	Environment, Sustainability	-----





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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
4	B. Com First Year Paper-IV I.T. Application in Business Core	I & II	Computer Codes and Language; Number system ,Word- Processing ,Presentation Preparation by using MS-Power Point ,Spreadsheets ,Business Communication, Internet Technology ,Electronic Communication	Professional Ethic	Human Values	-----	-----
5	B. Com First Year Paper-V Entrepreneurship Development Elective	I & II	Characteristics of Entrepreneur, Importance of Entrepreneurship, Theories of Entrepreneurship, Market Research, New trends in Entrepreneurship, Project Management.	Professional Ethics	Human Values	Environmental Sustainability	-----
6	B. Com First Year Paper-III Corporate Accounting (Core)	1 & II	Issues and Forfeiture of shares, Re-issue of Shares , Redemption of Debentures, Preference Shares, Final accounts of Joint stock Company Profit prior to incorporation, Amalgamation of Joint Stock, Absorption Reconstruction, Holding and Subsidiary Company and Liquidation	Professional Ethics	Human values	Environmental Sustainability	-----
7	B. Com Second Year Paper: IV Cost Accounting (Core)	IV	Importance of Cost Accounting: Elements, Material, Labour, Overhead. Single or Output Cost, Contract Costing, Operating Costing or Service Costing, Process Costing, Reconciliation	Professional Ethics	Human values	-----	-----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
8	B. Com Second Year Paper-V I.T. Application in Business (Core)	IV	Introduction to Internet Workspace: Gmail, Google Calendar, Drive, Docs, Sheets, Slides, Meet, Classrooms. Online Survey conducting by use of Google Form and Cyber Crime- Commerce-Marketplace, E-payment System, E-Government	Professional Ethics	Human Values	-----	-----
9	B. Com Second Year Paper-VI Goods and Services Tax (Ability Enhancement)	IV	Evolution and Overview of GST, Registration under GST; Supply under GST, Input tax Credit under GST, Documents, Accounts under GST, Composition scheme under GST, Reverse charge Mechanism, E-way Bill procedure.	Professional Ethic	Human Values	-----	-----
10	B. Com Second Year Paper-VII Financial Management (Elective)-Sem III Business Environment Sem-IV	IV	Introduction, Nature & Scope of Financial Management, Cost of Capital and Capital Structure, Leverages, Working Capital Management, Dividend Policy Nature and Features of Business Environment, Problem of Growth, Government Policies, Economic Trends, International Business environment	Professional Ethics	Human Values	Environmental Sustainability	-----
11	B. Com Third Year Paper-I Advanced Financial Accounting	V & VI	Single Entry System, Final Accounts of Banking, Insurance Company, Investment Accounts, Emerging Trends in Accounting, Indian Accounting Standards, Farm Accounting, Final Accounts of Local Self Government, Final Accounts of Electricity Company, International Financial Reporting Standards.	Professional Ethics	Human values	Environmental Sustainability	-----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
12	B. Com Third Year Paper-II Management Accounting (Core)	V&VI	Introduction and Scope of Management Accounting, Financial Statement preparation, Ratio Analysis, Fund Flow Statement, Cash Flow Statement, Working Capital Management, Budgetary Control, Capital Budgeting, Responsibility Accounting.	Professional Ethics	Human values	Environmental Sustainability	-----
13	B. Com Third Year Paper-III Auditing -Sent -V and VI (Core) Direct Taxes (Core) Sem-V and VI	V&VI	Meaning and Scope of Auditing ,Types of Auditing , Audit Planning, Vouching and Verification, Company Auditor, Introduction about Direct and Indirect Taxes Income Tax Act 1961, Income from Salary, Income from Business and Profession, Income from House Property, Income from Capital Gain and Income from other Sources	Professional Ethics	Human Values	-----	-----
14	B. Com Third Year  Paper-IV Business Regulatory Framework (Core)	V&VI	The Indian Contract Act- 1872; Special Contract, Sale of Goods Act 1930, Consumer Protection Act 1986, The Right to Information Act 2005 ,Negotiable Instrument Act 2002, Company Act 2013, The SEBI Act 1991, Intellectual Property Act.	Professional Ethic	Human Values	-----	-----
15	B. Com Third Year Paper-V Computerized Accounting (Ability Enhancement Course)	V&VI	Evolution of Manual to Computerized Accounting System, Benefits of Computerized Accounting (Tally.ERP9), Maintaining Accounting Masters, Maintaining Inventory Masters, Advance Computerized Accounting Features, Advanced Inventory Features, Stock Transfers, Bill of Materials, Batch -wise Details	Professional Ethic	Human Values	-----	-----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
16	B. Com Third Year Paper-VI MSME Elective Capital Market-VI	V&VI	MSME Environment in India, Setting-up of MSME 'S Financial Management of MSME, Marketing and Human Resource Management in MSME, Institutional Assistance for MSME, Indian Financial System, Introduction and Working of Indian Stock Exchanges, Trading in Stock Markets, Merchant Banking , Over-the - Counter Exchange in India	Professional Ethics	Human values	Environmental Sustainability	-----
17	M.Com First Sem I Paper-I Management Process and Organizational Behavior (Core)	I	Evolution of management, thoughts, function, role of management in globalization, management motivation, concept and organizational behavior, Motivation concept and theories of motivation, group dynamic and team development, meaning, significance, development organizational conflict,	Professional Ethics.	-----	-----	-----
18	M.Com First Sem I Paper: II Managerial Economics (Core)	I	Nature and scope of managerial economics, objective, economic theories, Demand analysis, law of demand, use in decision making process, Theory of consumer choice, demand estimation, demand forecasting and techniques, Production theories, function, stages of production, cost theories and estimation economics of scale, Price determination under different market condition, Business cycle, nature and Phases of business cycle, theories of business cycle etc.	-----	-----	-----	-----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
19	M.Com First Sem I Paper-III Corporate Financial Accounting	I	Financial accounting generally accepted Accounting principle, Indian Accounting standard, international accounting standard, preparation and analysis of financial account, various companies, valuation of shares and Goodwill, accounting issues relating to mergers and acquisitions holding company and inflection accounting	-----	-----	-----	-----
20	M.Com First Sem I Paper-IV Business Environment (Elective)	I	Concept of business environment, significance and natures of business, environment economic, environment of business, government policies, industrial policies,, economic reforms Political and legal environment, impact on business policies, social responsibilities of business and role of government MRTP act, listening, Sales Good act, consumer protection act, Social-culture environment, International and technological environment, multinational companies, foreign operation an Indian businesses, technology environment of India research and development patents, law technology transfer etc.	Professional Ethics	Human Values	Environmental Sustainability	-----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
21	M.Com First Sem II Paper-I Advanced Cost Accounting (Core)	II	Budgetary control system concept and features budget and forecast standard costing meaning objective significance and limitation of standard costing marginal costing meaning objective features advantages and limitation Break even and cost welling profit analysis method of calculation of BEP Break even chart impact of variables and fixed cost $z$ Preparation of financial and cost information to management concept of report types of reports report management essential for preparation of good reports	Professional Ethics	Human Values	Environmental Sustainability	-----
22	M.Com First Sem II Paper-II Marketing Management (Core)	II	Concept nature scope and importance marketing mix Market analysis and selection, consumer behavior consumer, decision making process Pricing decision. Factor affecting pricing price determination Distribution channels function and types of distribution channels Promotion decision communication process promotion mix advertising personal selling sale promotion media selection advertisement budget sale promotion tools and techniques	Professional Ethics	Human Values	Environmental Sustainability	-----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
23	M.Com First Sem II Paper-III Financial Management (Core)	II	Financial management objectives wealth maximization finance function investment financing dividend decision Operating and financial leverage computation of combined financial and operating leverage Cost of capital types computation and different sources of capital Management of working capital Capital budgeting decision Internal rate of return method accounting rate of return risk analysis	Professional Ethics	Human Values	Environmental Sustainability	-----
24	M.Com First Sem II Paper-V E- Business-V (Elective)	II	E businesses definition significance of a business basically means mobile commerce e service internet service providers meaning history importance of internet internet via online services worldwide wave e media launching on line sites Tele shopping daily marketing Electronic banking electronic payment system electronic payment technology digital cyber crime process and concept digital signature issue in online banking E-Commerce and retailing Online customer sendee and support online publishing advertising and online publishing Technology and market strategy internet and manufacturing search engine and its types software modules in financial information system treasury and cash management etc	Professional Ethics	Human Values	Environmental Sustainability	-----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
25	M Com Second Year Sem III Paper-I Research Methodology (Core)	III	Introduction about Research Methodology, Objectives of Research, Planning of Research, Process of Research, Methods of Data Collection, Sampling Process and Techniques	Professional Ethics	Human Values	Environmental Sustainability	-----
26	M Com Second Year Sem III Paper: II Human Resource Planning & Development (Core)	III	Needs of Human Resource Planning, Job Analysis Process, Training and Development methods, Performance Analysis method, Strategies for Human Resource Development.	Professional Ethics	Human Values	Environmental Sustainability	-----
27	M Com Second Year Sem III Paper-III Business Legislation (Core)	III	The Companies Act 2013, Share Capital, Company Management, Security Market; SEBI Act 1992, Consumer Protection Act 1986; Salient features, Definition.	Professional Ethics	Human Values	Environmental Sustainability	-----
28	M Com Second Year Sem III Paper-IV International Marketing- IV (Elective)	IV	Introduction to International Marketing, Marketing Environment, Foreign Market Selection, Product Decision Making Process. Pricing Policy and Promotion, Distribution channel and Logistics.	Professional Ethics	Human Values	Environmental Sustainability	-----
29	M Com Second Year Sem III Paper-VI Services Course (Generic Elective)	IV	Introduction about Entrepreneurship and Types of Entrepreneur, Project Management under the Entrepreneurship, Preparation of Project and Submission to the various Government Agencies, Entrepreneurs of 21 <sup>st</sup> Century,	Professional Ethics	Human Values	Environmental Sustainability	-----





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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
30	M Com Second Year Sem IV Paper-I Quantitative Techniques (Core)	IV	Applications during the process of decision making, Operational Research Fundamentals, Linear Programming Theory, Transportation Problems, Inventory Management Techniques, Decision Analysis and Tree. PERT/CPM Controlling Techniques of Management.	Professional Ethics	Human Values	Environmental Sustainability	-----
31	M Com Second Year Sem IV Paper-II Securities Analysis (Core)	IV	Meaning and Definition of Investment on Security, Security Pricing, Trading in Securities, Analysis of Securities, Portfolio Management.	Professional Ethic	Human Values	-----	-----
32	M Com Second Year Sem IV Paper-III Research Project	IV	Research Project: Selection of Research Area of the Study, Data Collection of Method. Data Interpretation Method, Sampling Techniques method. Process of Research, the process of Sampling Error.	Professional Ethics	Human Values	Environmental Sustainability	-----
33	M Com Second Year Sem IV Paper-V International Business (Elective)	IV	Nature and Importance of International Business, Factors affecting in International Business, Role of International Institutions: GATT. WTO, ECM. IME, IDR. and IFC. International Business Promotion. Ethics & Social Responsibilities.	Professional Ethics	Human Values	Environmental Sustainability	-----



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**Cross Cutting Issues**

**Department of B.Voc. (Professional Accounting and Taxation)**

**B.Voc. (UG)**

Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
1	First Year SEMESTER – II Energy and Environment Subject Code: VOC204	II	<b>Energy and Environment</b> <b>Module I:</b> <b>Environment:</b> Environment Science, Scope and importance. Components of environment - i) Atmosphere, composition of atmosphere, ii) lithosphere – structure of lithosphere, soil formation, soil composition and properties of soil. iii)Hydrosphere – distribution of water on earth, global water balance and hydrological cycle.	-----	-----	Environment and Sustainability	-----



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**Shri Muktanand College, Gangapur**

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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<b>Module II</b> <b>Environment problems:</b> i. Air pollution – concept, source of air pollution, major atmospheric pollutants, air quality standards monitoring of major air pollutants. ii. Water pollution – sources of water pollution, river pollution, underground water pollution, oil pollution, thermal pollution, water pollution due to sewage, effects of water pollution , waste water treatment iii. Noise pollution – sources of noise, effects of noise pollution, noise pollution, noise pollution control equipment silencers and noise absorbing devices, noise standards and industrial noise control. iv. Soil pollution – causes of soil pollution major soil pollutants, industrial waste and their role in soil pollution. v. Radiation pollution – sources of radioactive pollution, effects of radioactive pollution on health.	Professional Ethics.	human Values	Environment and Sustainability	-----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<b>Module: III</b> <b>Impact of industries on Environment -</b> - Water pollution episodes due to industrial pollutants, effects of industrial pollutants on aquatic organisms, industrial e. and underground water quality. Air pollution episodes due to industries - Bhopal gas tragedy, Photochemical smog, Acid rivers etc. Industrial noise pollution and workers health problems.	Professional Ethics.	human Values	Environment and Sustainability	-----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<p><b>Module: IV</b>  <b>Water Conservation</b> – water use pattern – water use in industry, water s... water conservation – methods of water conservation, rain water harvesting, Reuse and recycle of water.  <b>Conservation Natural resources and sustainable Development:</b> - Renewable natural resources, non-renewable natural resources, use of non-renewable resource and degradation of environment, use of minerals in industries and environmental problems of mining, conservation of natural resources, recycling of metals etc.</p>	Professional Ethics.	human Values	Environment and Sustainability	----
			<p><b>Module: V:</b>  <b>Energy conservation:</b> - Energy resources –                      i) Conventional energy resources of wood, fossil fuel etc.                      ii) non-conventional energy etc. Environmental problems due to conventional energy sources, conservations of energy resources  <b>Pollution Control:</b> Air pollution control equipments, air pollution control in industry ; water pollution control – sewage treatment plant, effluent treatment plant; noise pollution control in industry soil reclamation methods.</p>	Professional Ethics.	human Values	Environment and Sustainability	----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
2	<b>Second Year SEMESTER - III</b> Subject Code: <b>VOC302 Professional Ethics</b>	III	<b>Professional Ethics Module - I</b> <b>Moral Values :</b> Morals, Values: Definition – Need for Values, Kinds of Values, Value conflicts Clarification and value acceptance.	Professional Ethics.	Human Values	-----	----
			<b>Module - II Ethics:</b> Definition and meaning, Elements/components – Autonomy, Integrity, Work ethics, Survey Learning, Civic Virtue, Respect of others, living peacefully, Caring, Sharing, Honesty, Couraj Valuing at Time, Co-operation, Commitment, Empathy, Self Confidence, Character, Spirituality.	Professional Ethics.	Human Values	-----	----
			<b>Module - III Ethical Theory:</b> Classic – Deontology, Theology, Contemporary-Feminist Ethics, Justices Ethic Value Ethics.	Professional Ethics.	Human Values	-----	-----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<b>Module – IV</b> <b>Profession:</b> Profession meaning, two models of Professionalism, Three types of Ethics or morality. Ethics in different professions, Code of Professional Ethics, Implementation of Ethical Code in Organization.	Professional Ethics.	Human Values	-----	--
			<b>Module – V</b> <b>Ethical Practices and Issues:</b> Professional organization statement, positions, Barriers to ethical practices, Strategies for individuals. Ethical Decision making. Corporate Social responsibilities.	Professional Ethics.	Human Values	-----	--
	<b>Third Year</b> <b>SEMESTER – V</b> Subject Code: <b>VOC501</b> <b>Personality Development &amp; Stress Management</b>	V	<b>Personality Development &amp; Stress Management</b> <b>Module -I:</b> Personality – Definition, Concept, facets, aspects, dimensions, types	Professional Ethics.	Human Values	-----	Gender
<b>Module- II:</b> Relationship Management: Self, Environment, Attitude, Self-Esteem, Motivation, Need base analysis, Assertiveness			Professional Ethics.	Human Values	-----	Gender	
<b>Module-III:</b> Body Language & Learning Life Skills, Intrapersonal Skills, Interpersonal Skills, Soft Skills			Professional Ethics.	Human Values	-----	Gender	



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<b>Module- IV:</b> Stress Management	professional Ethics.	----	----	gender
			<b>Module- V:</b> Leadership & Emotional Intelligence – concept, types, facets, skills, qualities	Professional Ethics.	human Values	----	----
4	Third Year <b>SEMESTER – VI</b> Subject Code: <b>VOC601 Entrepreneurship Development</b>	VI	<b>Entrepreneurship Development</b> <b>Course Objectives &amp; Learning Outcomes:</b> <b>Module – I Introduction:</b> <ul style="list-style-type: none"> <li>• Concept, meaning and definition of entrepreneur and entrepreneurship. Importance and significance of growth of entrepreneurial activity. Characteristics and qualities of entrepreneurs</li> <li>• Classification and types of entrepreneurs. Women entrepreneurs</li> <li>• Theories of entrepreneurship Contribution of Ms. Clelland and Joseph Schumpeter</li> </ul>	Professional Ethics.	human Values	----	gender





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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<b>Module -II: Entrepreneurship and EDP</b> <ul style="list-style-type: none"> <li>• Factors influencing entrepreneurial development and motivation. Role of culture in entrepreneurial development.</li> <li>• Entrepreneurial development program (EDP), Managing the problems faced by entrepreneurs Development of women entrepreneurs-with reference to SHGs</li> <li>• Options available to entrepreneurs, ancillarisation franchising and outsourcing. Cases on takeover, mergers and acquisitions in India and at global level.</li> <li>• Social Entrepreneurship - Definition, importance and social responsibilities NGOs</li> </ul>	Professional Ethics.	Human Values	-----	-----
			<b>Module-III: Entrepreneurial Development</b> <ul style="list-style-type: none"> <li>• Idea generation – sources and methods Identification and classification of ideas. Environmental Scanning and SWOT analysis Preparation of project plan – points to be considered</li> <li>• Components of an ideal business plan – market plan, financial plans, operational plan, and HR plan. Project formulation –</li> </ul>	Professional Ethics.	Human Values	-----	-----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<ul style="list-style-type: none"> <li>project report significance and contents</li> <li>Project appraisal – Aspects and methods:</li> </ul> <b>Module-IV: Small and Medium Enterprises:</b>				
			<ul style="list-style-type: none"> <li>Meaning and definition (evolution) Role and importance</li> <li>Policies governing SMEs Organizational structure Steps in setting up a small Module</li> <li>SME funding. Requirements of capital (fixed and working), Factors determining capital requirements, Importance of fixed and working capital, Working capital management, Sources of finance for SME'S. Taxationbenefits</li> <li>SIDBI and SISI – Their role in the development of SMEs. Taxation benefits SIDBI and SISI – Their role in the development of SMEs</li> <li>Marketing mechanism in SMEs Problems of SMEs and prospects Turnaround strategies for SMEs</li> </ul>	Professional Ethics.	Human Values	-----	-----
			<b>Module- V: Project Report</b> Meaning and Concept, Standard method of preparing Project Report, Content of Project	Professional Ethics.	Human Values		I Gender Equality



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
5	Third Year Semester-V VOC 502 Generic Skill-V Business Law-I	V	<b>Business Law-I</b> <b>Module-I: Indian Contract Act - 1872. — Part-I [12Hrs]</b> Meaning and nature of contract, essentials of valid contract, Meaning and kinds of agreements, Agreements declared void, voidable contracts, Offer and Acceptance of an offer, Capacity of parties to contract.	Professional Ethics	Human Values	-----	Gender
			<b>Module-II. Indian Contract Act - 1872. — Part-II [12Hrs]</b> Free consent, Lawful object, Consideration.	Professional Ethics	Human Values	-----	
			<b>Module-III. Indian Contract Act- 1872. —Part-III [12Hrs]</b> Performance of contract, Discharge or Termination of contract, Breach of contract	Professional Ethics	Human Values	-----	Gender



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<b>Module-IV. Special Contracts. [12Hrs]</b> Indemnity and Guarantee contracts, Bailment and Pledge contracts, Agency contracts.	Professional Ethics	Human Values	-----	Gender
			<b>Module-V. Consumer Protection Act (Amended Act) [12Hrs]</b> Objectives and Important Definitions of Act, Composition and working of Consumer protection councils, Composition and working of Consumer Disputes Redressal mechanism.	Professional Ethics	Human Values	-----	Gender
6	<b>Third Year V Semester VOC 602</b> Generic Skill-VII (For Specific Skill Cluster) <b>Business Law-II</b>	V	<b>Business Law-II</b> <b>Module-I: The Companies Act, 2013 [12Hrs]</b> Essential Features of Company, Types of Company, Share Capital and Its Type, incorporation/Formation of Company, Memorandum and Articles of Association, Management and Administration Meetings of Board and its powers, Winding Up and Producer Companies, Audit and Auditor <b>Module-II: Sales of Goods Act - 1930. — Part-I [12Hrs]</b>	Professional Ethics	Human Values	-----	Gender



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
			Meaning and Definition of Sales of goods contract, Formation of Contract, Conditions and Warrantees, Transfer of property / ownership. Delivery of goods, Unpaid seller, Breach of contract, Sale by Auction	Professional Ethics	Human Values	-----	Gender
			<b>Module-III: The Indian Partnership Act 1932 [12Hrs]</b> Partnership-General Nature, their Rights and Duties Registration and dissolution of Partnership.	Professional Ethics	Human Values	-----	Gender
			<b>Module-IV: Negotiable Instruments Act - 1881: Part-I [12Hrs]</b> Meaning, Definition and Characteristics of Negotiable Instruments, Rights & Obligations of Parties, Promissory Note, bill of exchange and Cheque, Crossing of cheque, Negotiation of negotiable instruments, Presentment of negotiable instruments Dishonor of negotiable instruments, Discharge of negotiable instruments.	Professional Ethics	Human Values	-----	Gender.
			<b>Module-V: Securities Exchange Board of India Act, 1992 (SEBI) [12Hrs]</b> SEBI: Introduction, Functions, Obligation of SEBI, Issue of Capital, Discloser, Listing and its Role in Stock Market.	Professional Ethics.	Human Values	-----	Gender



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**Department of B.Voc. Sustainable Agriculture**  
**B.Voc. (UG)**

Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
1	First Year SEMESTER – I Subject Code: VOC101 Functional English	I	<p><b>Unit - I Tenses:</b></p> <p>1) Present tense (includes all four types of tenses each)</p> <p>2) Past tense</p> <p>3) Future tense</p> <p><b>Unit - II Spoken English:</b></p> <p>1. Basic of pronunciation: Vowels, diphthongs,</p> <p>2. Certain basic sounds including th, dh, gh sounds, fricatives etc.</p> <p>3. Differences in the sounds of the letters, especially, w/v, f/ph etc.</p> <p>4. Phonetic transcriptions.</p> <p><b>Unit - III</b></p> <p>1. Introducing yourself (The communicator)</p> <p>2. Introducing people to others</p> <p>3. Giving personal information</p> <p><b>Unit - IV</b></p> <p>1. Getting people's attention and interrupting</p> <p>2. Giving instructions and seeking clarifications</p> <p>1. Making requests and responding to requests</p> <p><b>Unit - V</b></p> <p>1. Pronunciations</p>	Professional Ethics	-----	-----	----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
2	First Year SEMESTER – I Subject Code: VOC102 Computer Skills	I	<p><b>Unit -I:</b> Computer Architecture, Mother Board and its all components, Computer Components (Input/ Output Devices, Primary and Secondary Memory, Power Supply, Monitor).</p> <p><b>Unit -II:</b> Observation of all parts of Floppy drives, HDD, CD, and SMPS. Identification of cables and computers. Mounting Motherboard in cabinet, Installation of cards, devices and then connecting cables. Fitting of cabinet. CMOS – Setup, Troubleshooting.</p> <p><b>Unit -III:</b> Computer Assembling, make your own Computer, Operating System Installation, Windows Vista, Software Installation, Trouble Shooting, Bios Setups, Identifications of Components. Advanced Trouble Shooting and Maintenance.</p> <p><b>Unit -IV:</b> Types of printers and printing mechanism, How printer works, Inject printer, working of laser printer, Fonts/Typefaces, Troubleshooting printers. Types of Scanners and its used.</p> <p><b>Unit -V</b> Introduction to Laptops, Portable</p>	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			System background, System Features, Processors, Mother Boards, Memory, Power, Expansion Bus, Hard Disk & Removable Storage Devices, Laptop Components, Laptop Maintenance & Assembling, Linux, Multimedia, Internet, Computer VIRUS, Wi-Fi Network Trouble Shooting.				
3	First Year SEMESTER – I Subject Code: VOC103 Generic Skills- I (Principles of Soil Science)	I	<ul style="list-style-type: none"> <li>➤ History and development of soil science, its scope and importance. Soil as natural body, pedological and edaphological concept of soil.</li> <li>➤ Soil genesis: Soil forming rocks and minerals.</li> <li>➤ Weathering of Rocks and Minerals.</li> <li>➤ Processes and factors of soils formation.</li> <li>➤ Soil profile, components of soil.</li> <li>➤ Soil physical properties: Soil texture, structure, density and porosity.</li> <li>➤ Soil colour, consistency and plasticity.</li> </ul> History and development of soil science, its scope and importance.	Professional Ethics	-----	-----	-----





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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<ul style="list-style-type: none"> <li>➤ Soil as natural body, pedological and edaphological concept of soil.</li> </ul>				
4	<p style="text-align: center;"><u>First Year</u>            SEMESTER – I            Subject Code: VOC104            Skill Specific Organization Practices (Principles of Horticulture)</p>	I	<p><b>Unit- I</b></p> <ul style="list-style-type: none"> <li>➤ Horticulture-Its definition and branches, importance and scope</li> <li>➤ Horticultural and botanical classification</li> <li>➤ Climate and soil for horticultural crops</li> </ul> <p><b>Unit- II</b></p> <ul style="list-style-type: none"> <li>➤ Plant propagation-methods and propagating structures</li> <li>➤ Principles of orchard establishment Principles and methods of training and pruning, juvenility and flower bud differentiation</li> <li>➤ Unfruitfulness</li> </ul> <p><b>Unit- III</b></p> <ul style="list-style-type: none"> <li>➤ Pollination, pollinizers and pollinators</li> <li>➤ Fertilization and parthenocarpy</li> </ul> <p><b>Unit- IV</b></p>	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
5	First Year SEMESTER – I Subject Code: VOC111 Skill Specific- I (Introductory Microbiology)	I	<p><b>Unit - I</b></p> <ul style="list-style-type: none"> <li>• Microbiology: Introduction, Scope in Agriculture and allied fields.</li> <li>• History of Agricultural Microbiology, development of Microbiology. Development of Microscope</li> <li>• Microbial World: Prokaryotic and eukaryotic microorganisms.</li> </ul> <p><b>Unit -II</b></p> <ul style="list-style-type: none"> <li>• Bacteria: cell structure, morphology, cytology and other characters, functions of external and internal parts.</li> <li>• Bacteria: Nutrients required for growth of bacteria, chemoautotrophy, photo autotrophy, Microbial growth</li> <li>• Bacterial genetics: Genetic recombination- Gene transfer by transformation, conjugation and transduction, Plasmids,</li> <li>• Role of microbes in soil fertility and crop production. Microbial transformation of Nitrogen, Biological nitrogen fixation- symbiotic, asymbiotic and associative, Azolla, blue green algae.</li> </ul>	Professional Ethics	----	-----	----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<p><b>Unit -III</b></p> <ul style="list-style-type: none"> <li>• Microbial transformation of phosphorus, Sulphur and carbon, decomposition of organic matter</li> <li>• Mycorrhiza: structure, types, merits, demerits</li> <li>• Rhizosphere and Phyllosphere; Rhizosphere concept, microbes of Rhizosphere, Phyllosphere: Phyllospheric microflora.</li> </ul> <p><b>Unit -IV</b></p> <ul style="list-style-type: none"> <li>• Silage production, single cell protein, Bio-fuel production- concept</li> <li>• Biofertilizers: definition, types of biofertilizers,</li> <li>• Bio-pesticides-Microbial insecticides</li> </ul> <p><b>Unit -V</b></p> <ul style="list-style-type: none"> <li>• Biodegradation of agro-waste.</li> <li>• Mushrooms- edible and poisonous, culturing and production.</li> </ul> <p>Microbes in human welfare</p>				
6	<p>First Year SEMESTER – I Subject Code: VOC112 Skill Specific- II (Principles of Agronomy-I)</p>	I	<p><b>Unit -I</b></p> <ul style="list-style-type: none"> <li>• Agronomy, its definition, scope, role of Agronomist and relationship of Agronomy with other sciences.</li> <li>Tillage, its definition, objects of tillage, types of tillage, tillage implements and factors</li> <li>• affecting tillage, Effect of tillage on soil and crop growth.</li> </ul>	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<p><b>Unit -II</b></p> <ul style="list-style-type: none"> <li>• Tilth: its definition, characteristics and ideal tilth, Modern concepts of tillage, minimum, zero and stubble mulch tillage, importance of puddling.</li> <li>• Seed, its definition, characteristics of quality seed, seed treatment and its objectives seed dormancy, causes of seed dormancy and multiplication, stages of seed.</li> <li>• Methods of sowing seed and sowing implements.</li> </ul> <p><b>Unit -III</b></p> <ul style="list-style-type: none"> <li>• Effect of plant population on growth and yield, Planting geometry viz., solid, paired and skipped row planting</li> <li>• Role of plant nutrients in crop production, Importance of manures and fertilizers and its classification.</li> <li>• Methods and time of application of manures, fertilizers and green manuring.</li> <li>• Nutrient use efficiency, meaning and factors affecting nutrient use efficiency.</li> </ul> <p><b>Unit -IV</b></p> <ul style="list-style-type: none"> <li>• Growth and development, its definition, growth curve and factors affecting growth and development.</li> <li>• Plant ideotypes, its definition and types of ideotypes.</li> <li>• Crop rotation, its definition, principles and advantages of crop rotation.</li> <li>• Study of crop adaptation and its distribution</li> </ul>				



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<ul style="list-style-type: none"> <li>Weeds, its definition, characteristics of weeds, merits and demerits of weeds, classification of weeds, meaning of crop weed competition and its period in different crops.</li> </ul> <p><b>Unit -V</b></p> <ul style="list-style-type: none"> <li>Principles and methods of weed management viz., cultural, mechanical, chemical, biological weed control methods and integrated weed management. Classification of herbicides, its selectivity and resistance, Allelopathic effect of weed. Crop harvesting, signs of maturity in different field crops, Physiological and crop maturity, Methods of threshing crops, Cleaning, Drying and Storage of field crops.</li> </ul>				
7	<p><u>First Year</u>            SEMESTER – I            Subject Code:            VOC113            Skill Specific- III            (Introductory            Agro-            meteorology            and Climate            change)</p>	I	<p><b>Unit – I</b></p> <ul style="list-style-type: none"> <li>Meaning and scope of agricultural meteorology</li> <li>Earth's atmosphere - its composition, extent and structure; Atmospheric weather variables</li> <li>Atmospheric pressure – its variation with height</li> <li>Wind-types of wind, daily and seasonal variation of wind speed, cyclone, anticyclone, land breeze and sea breeze</li> </ul> <p><b>Unit - II</b></p> <ul style="list-style-type: none"> <li>Nature and properties of solar radiation, solar constant, depletion of solar radiation, short wave, long wave and</li> </ul>	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<ul style="list-style-type: none"> <li>• thermal radiation, net radiation, albedo</li> <li>• Atmospheric temperature - temperature inversion, lapse rate, daily and seasonal variations of temperature, vertical profile of temperature, Energy balance of earth</li> <li>• Atmospheric humidity - concept of saturation, vapour pressure, process of condensation, formation of dew, fog, mist, frost, cloud</li> </ul> <p><b>Unit - III</b></p> <ul style="list-style-type: none"> <li>• Precipitation –process of precipitation, types of precipitation such as rain, snow, sleet and hail</li> <li>• Cloud formation and classification</li> <li>• Artificial rainmaking; Monsoon mechanism and importance in Indian agriculture</li> </ul> <p><b>Unit - IV</b></p> <ul style="list-style-type: none"> <li>• Weather hazards - drought, floods, frost, tropical cyclones and extreme weather conditions such as heat-wave and cold wave</li> <li>• Agriculture and weather relations</li> <li>• Modifications of crop microclimate</li> </ul> <p><b>Unit - V</b></p> <ul style="list-style-type: none"> <li>• Climatic normals for crop and livestock production</li> <li>• Weather forecasting - types of weather forecast and their uses Climate change, climatic variability, global warming, causes of climate change and its impact on regional and national Agriculture</li> </ul>				



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
8	First Year SEMESTER – II Subject Code: VOC201 Linguistic Proficiency- English	II	Module –I: INTRODUCING WRITTEN COMMUNICATION 1. Writing Notices 2. Drafting Agendas (Synergy) 3. Writing minutes 4. Note taking 5. Basic of spoken English Module: II: WRITING APPLICATIONS, LETTERS AND 1. Writing applications for various jobs, referring to the adds. 2. Writing letters: Module: III: BUSINESS CORRESPONDENCE (Introducing Business Correspondence): 1. Letters of inquiry 2. Letters of order 3. Letters of complaint 4. Letters of indent 5. Letters of credit 6. Bills of lading (Exercises from Synergy) orient Longman Module- IV: INTRODUCING LISTENING SKILLS 1. Approaches to listening skills 2. Barriers to effective listening Tips for effective listening	Professional Ethics	-----	-----	-----
9	First Year SEMESTER – II Subject Code: VOC202 Generic Skills- II (Principles of Genetics)	II	<b>Pre and post Mendelian concepts of heredity: Pre Mendelian-concepts:(500BC-1850A.D.)</b> 1. Pre-formation Theory 2. Theory Epigenesis 3. Theory of Acquired characters 4. Theory of Pangenesis	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			5. Germ plsm theory Other contributions during pre-Mendelian era <b>Mendelian Era:(1850 -1900):</b> Contributions during Mendelian era <b>Post Mendelian concepts:</b> Contributions during Post-Mendelian era and recent advances after 1900. <b>Cell division: Mitosis, Meiosis:</b> Cell: Ultra structure, Cell organells & their functions. Types of Cell, Difference between animal cell and plant cell. <b>Stages of mitosis &amp; meiosis.</b> Significance of mitosis & meiosis Difference between mitosis & meiosis. <b>Sex determination and sex linkage, Sex limited and sex influenced traits.</b> Introduction, Importance of Sex determination, Difference between autosomes and allosomes. Allosomal sex determination: . XX-XY System . ZW-ZZ (XY-XX) System Sex linked characters: (Colour blindness in human being) Difference between Sex limited and sex influenced traits:				





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				Professional Ethics	Human Values	Environment, Sustainability	Gender
10	First Year SEMESTER – II Subject Code: VOC204 Energy and Environment	II	<p><b>Module I:</b>  <b>Environment:</b> Environment Science, Scope and importance. Components of environment –</p> <p>i) Atmosphere, composition of atmosphere,                      ii) lithosphere – structure of lithosphere, soil formation, soil composition and properties of soil.                      iii) Hydrosphere – distribution of water on earth, global water balance and hydrological cycle.</p> <p><b>Module II</b>  <b>Environment problems:</b></p> <p>i. Air pollution – concept, source of air pollution, major atmospheric pollutants, air quality standards monitoring of major air pollutants.                      ii. Water pollution – sources of water pollution, river pollution, underground water pollution, oil pollution, thermal pollution, water pollution due to sewage, effects of water pollution, waste water treatment                      iii. Noise pollution – sources of noise, effects of noise pollution, noise pollution, noise pollution control equipment silencers and noise absorbing devices, noise standards and industrial noise control.                      iv. Soil pollution – causes of soil pollution major soil pollutants, industrial waste and their role in soil pollution.                      v. Radiation pollution – sources of radioactive pollution, effects of radioactive pollution on health.</p> <p><b>Module: III</b>  <b>Impact of industries on Environment –</b></p>	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<p>- Water pollution episodes due to industrial pollutants, effects of industrial pollutants on aquatic organisms, industrial e. and underground water quality.</p> <p>- Air pollution episodes due to industries – Bhopal gas tragedy, Photochemical smog, Acid rivers etc. Industrial noise pollution and workers health problems.</p> <p><b>Module: IV</b>  <b>Water Conservation</b> – water use pattern – water use in industry, water s... water conservation – methods of water conservation, rain water harvesting, Reuse and recycle of water.</p> <p><b>Conservation Natural resources and sustainable Development:</b> - Renewable natural resources, non-renewable natural resources, use of non-renewable resource and degradation of environment, use of minerals in industries and environmental problems of mining, conservation of natural resources, recycling of metals etc.</p> <p><b>Module: V:</b>  <b>Energy conservation:</b> - Energy resources –</p> <p>i) Conventional energy resources of wood, fossil fuel etc.</p> <p>ii) non-conventional energy etc.</p> <p>Environmental problems due to conventional energy sources, conservations of energy resources</p> <p><b>Pollution Control:</b> Air pollution control equipments, air pollution control in industry; water pollution control – sewage treatment plant, effluent treatment plant; noise pollution control in industry soil reclamation methods</p>	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
11	First Year SEMESTER – II Subject Code: VOC211 Skill Specific- IV (Principles of Entomology)	II	<p><b>Unit – I</b></p> <ul style="list-style-type: none"> <li>• Introduction and history of entomology in India including contribution of scientists in brief.</li> </ul> <p><b>Definitions:</b> Insect, Entomology and Agril. Entomology.</p> <ul style="list-style-type: none"> <li>• Classification of phylum Arthropoda up to classes.</li> <li>• Relationship of class Insecta with other classes of Arthropoda.</li> <li>• Insect dominance.</li> <li>• Economic importance of insects: Harmful, beneficial and productive insects.</li> </ul> <p>Premier institutes concerned with Entomology: IARI (Indian Agricultural Research Institute), CAB (Commonwealth Agricultural Bureau ), IOBC (International Organization of Biological Control), IIIP (International Institute of Insect Physiology), NBAIR (National Bureau of Agriculture Insect Resources), NIPHM (National Institute of Plant Health Management), IINRG (Indian Institute of Natural Resins and Gums), CIB &amp; RC (Central Insecticide Board and Registration Committee), CSB (Central Silk Board), NRCIPM (National Research Centre for Integrated Pest Management), IGSMRI (Indian Grain Storage Management and Research Institute), etc</p> <p><b>Unit – II</b></p> <ul style="list-style-type: none"> <li>• Insect Integument: Structure and functions. Cuticular appendages and</li> </ul>	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<ul style="list-style-type: none"> <li>• processes. Moulting: Definition and steps in moulting. Body segmentation: Structure of head, thorax and abdomen</li> <li>• Insect head capsule: Important sclerites and sutures. Positions of head.</li> <li>• Structure and modifications (with examples) of insect antennae, mouth parts, legs and wings (wing venation, wing coupling apparatus with examples).</li> </ul> <p>Structure of thorax and abdomen: segmentation, appendages and processes, pregenital and post genital appendages and structure of male and female genital organ</p> <p><b>Unit - III</b></p> <p>Metamorphosis: Definition and types of metamorphosis with examples and its significance. Insect diapause: Definition and example, Seasonal adaptations in insects: Aestivation, Hibernation and quiescence: Definitions</p> <ul style="list-style-type: none"> <li>• Insect egg: General structure, types of egg with examples (at least one)</li> <li>• Types of larva and pupa with examples.</li> <li>• Sensory organs like Mechanoreceptors (Trichoid sensilla campaniform sensilla, chordotonal organ), chemo receptors (gustatory/olfactory), audio receptors: Johnston's organ and tympanum, photoreceptors- Compound eyes and simple eye, thermo/hygro receptors Sound producing organs in insects</li> <li>• Structure and functions of digestive,</li> </ul>				



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<ul style="list-style-type: none"> <li>Nervous, circulatory, respiratory, excretory, secretory and reproductive system in insects. Types of reproduction in insects.</li> </ul> <p><b>Unit - IV</b></p> <p><b>Systematics:</b></p> <ul style="list-style-type: none"> <li>Definitions: Taxonomy, Systematics, Binomial nomenclature, Order, Family, Genus, Species, Subspecies, Biotype.</li> <li>Binomial nomenclature: Definition and Rules. Classification of Class Insecta up to Orders.</li> <li>Study of important insect orders: Important distinguishing taxonomic characters of orders. Families of agricultural importance with examples. Orthoptera: Acrididae, Tettigonidae, Gryllidae, Gryllotalpidae                      Dictyoptera: Mantidae, Blattidae; Odonata; Isoptera: Termitidae; <b>Thysanoptera:</b> Thripidae</li> </ul> <p><b>Unit - V</b></p> <p>Hemiptera: Pentatomidae, Coreidae, Cimicidae, Pyrrhocoridae, Lygaeidae, Cicadellidae, Delphacidae, Aphididae, Coccidae, Aleurodidae, Pseudococcidae, Lophopidae, Lacciferidae; Neuroptera: Chrysopidae; Lepidoptera: Pieridae, Papilionidae, Noctuidae, Sphingidae, Pyralidae, Gelechiidae, Arctiidae, Saturniidae, Bombycidae <b>Coleoptera:</b> Coccinellidae, Chrysomelidae, Cerambycidae, Curculionidae, Bruchidae, Scarabaeidae; Hymenoptera:</p>				



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			Tenthredinidae, Apidae, Braconidae, Trichogrammatidae, Ichneumonidae, Chalcididae; Diptera: Cecidomyiidae, Tachinidae, Agromyziidae, Culicidae, Muscidae, Tephritidae Syrphidae				
12	First Year SEMESTER – II Subject Code: VOC212 Skill Specific- V (Principles of Agronomy –II)	II	<p><b>Unit – I</b></p> <ul style="list-style-type: none"> <li>• Definition of Irrigation and Water Management, its Objectives and Role of water in plants.</li> <li>• Water Resources of India and Maharashtra and Development.</li> <li>• Soil- water-plant Relationship, Soil Water, Movement of soil water, Infiltration, permeability, percolation, seepage</li> </ul> <p><b>Unit – II</b></p> <ul style="list-style-type: none"> <li>• Volume Mass Relationship, retention of soil water and factors affecting it.</li> <li>• Classification of Soil Water, Soil Moisture Constants, Soil Moisture characteristic curve.</li> <li>• Water absorption, factors affecting absorption, rooting characteristics, Moisture extraction patterns and SPAC</li> </ul> <p><b>Unit – III</b></p> <ul style="list-style-type: none"> <li>• Water requirement, Irrigation Requirement, Gross Irrigation, Net Irrigation, Irrigation interval and Methods of estimation of water requirement and factors affecting it.</li> <li>• Water requirement of different</li> </ul>	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<ul style="list-style-type: none"> <li>• Agronomic crops.</li> <li>• Evaporation, Transpiration, Evapotranspiration Potential- evapotranspiration, effective rainfall and consumptive use of water and factors affecting it.</li> </ul> <p><b>Unit – IV</b></p> <ul style="list-style-type: none"> <li>• Water Use efficiency, Irrigation Efficiencies and factors affecting it.</li> <li>• Criteria for scheduling of irrigation, Methods of irrigation, advantages, disadvantages.</li> </ul> <p><b>Unit – V</b></p> <ul style="list-style-type: none"> <li>• Water Quality parameters, Water logging, causes of water logging, Management of water-logged soils.</li> </ul> <p>Crop management techniques in problematic areas i.e. saline, alkaline, acidic soils.</p>	Professional Ethics	-----	-----	-----
13	First Year SEMESTER – II Subject Code: VOC213 Skill Specific- VI (Principles of Crop Physiology)	II	<p><b>Unit – I</b></p> <ul style="list-style-type: none"> <li>• Introduction to Crop Physiology and its importance in Agriculture.</li> <li>• Plant cell- structure, cell organelles and their role.</li> <li>• Absorption of water and path of water. Ascent of sap and theories of ascent of sap</li> </ul> <p><b>Unit – II</b></p> <ul style="list-style-type: none"> <li>• Transpiration- Definition, types, structure of stomata, physiology of stomata, factors affecting transpiration, Water use efficiency &amp; factors affecting</li> </ul>	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<ul style="list-style-type: none"> <li>• W.U. E.</li> <li>• Photosynthesis: Definition pigment involved, structure of chloroplast, light reaction- Photolysis of water, Emerson effect, Cyclic and non-cyclic electron transfer, Significance of light reaction.</li> <li>• Dark reaction- C<sub>3</sub>, C<sub>4</sub> and CAM plants factors affecting photosynthesis, photorespiration</li> </ul> <p><b>Unit - III</b> Respiration- Definition, types, glycolysis TCA cycle and electron transport chain. Fat metabolism- fatty acid synthesis and break down.</p> <p><b>Unit - IV</b> Plant Growth Regulators, Definition, types, physiological role and Agricultural uses of PGRS. Growth: Definition, types of growth, measurement of growth, growth analysis.</p> <p><b>Unit - V</b> Physiological aspects of growth and development of important cereals, pulses and oil seed crops. Photoperiodism- Definition, types, SDP, LDP and Day neutral plants-Induction a flowering and florigene concept.</p>	Professional Ethics	-----	-----	-----
14	Second Year SEMESTER - III Subject Code: VOC301	III	<p><b>Unit 1:</b> Communication: Definition, Concept, Process, Elements, Types, Barriers</p> <p><b>Unit 2:</b> Communication Skills: Effective communication through Listening, speaking, Reading and writing</p>	Professional Ethics	-----	-----	-----





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				Professional Ethics	Human Values	Environment, Sustainability	Gender
	Second Language-English		<b>Unit 3:</b> Elements of Spoken Communication and Phonetics, Elements of Written Communication & Grammar <b>Unit 4:</b> Technical Writing: Business Letter Writing, Job Application, Report Writing <b>Unit 5:</b> Body Language, Interview Skills, Group Discussions, Presentation Skills, Cross Cultural Communication, & Common Errors	Professional Ethics	----	-----	----
15	Second Year SEMESTER – III Subject Code: VOC302 Professional Ethics	III	<b>Module – I Moral Values:</b> Morals, Values: Definition – Need for Values, Kinds of Values, Value conflicts Clarification and value acceptance. <b>Module – II Ethics:</b> Definition and meaning, Elements/components – Autonomy, Integrity, Work ethics, Survey Learning, Civic Virtue, Respect of others, living peacefully, Caring, Sharing, Honesty, Couraj Valuing at Time, Co-operation, Commitment, Empathy, Self Confidence, Character, Spirituality. <b>Module – III Ethical Theory:</b> Classic – Deontology, Theology, Contemporary - Feminist Ethics, Justices Ethic Value Ethics. <b>Module – IV Profession:</b> Profession meaning, two models of Professionalism, Three types of Ethics or	Professional Ethics	----	-----	----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			morality. Ethics in different professions, Code of Professional Ethics, Implementation of Ethical Code in Organization. <b>Module - V</b> <b>Ethical Practices and Issues:</b> Professional organization statement, positions, Barriers to ethical practices, Strategies for individuals. Ethical Decision making. Corporate Social responsibilities.				
16	Second Year SEMESTER - III Subject Code: VOC303 Generic Skills-IV (Principles of Plant Breeding)	III	<b>Unit - I</b> <ul style="list-style-type: none"> <li>• Definition, history of plant breeding, aims and general objective of plant breeding</li> <li>• Land marks of plant breeding, Indian plant breeders, General objectives of plant breeding</li> <li>• Major achievements, Future Prospects.</li> <li>• Self-incompatibility- Definition, classification, heteromorphic SI, its features, distyly, tristyly, homomorphic SI, its types i.e. gametophytic SI and sporophytic SI, its features, utilization of self-incompatibility in plant breeding.</li> <li>• Male sterility- Definition, Classification/types, Genetic MS, Thermosensitive Genetic MS, Photosensitive Genetic MS, Transgenic MS, Cytoplasmic MS, Cytoplasmic Genetic MS,</li> <li>• Chemical Hybridizing Agents.</li> </ul>	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<p><b>Unit - II</b></p> <ul style="list-style-type: none"> <li>• Heritability- Definition, types-narrow and broad sense heritability</li> <li>• Components of genetic variation- Classification, definition and features of additive, dominance and epistatic variance, gene action</li> <li>• Concepts of population genetics- Definition and concept of population genetics, random mating population, gene and genotypic frequency</li> <li>• Hardy-Weinberg law- Law, its validity, factors affecting gene frequency</li> <li>• Breeding Methods in self-pollinated crops List of breeding methods</li> <li>• Plant Introduction- Definition, purpose, types i.e. primary and secondary introduction, advantages and disadvantages Acclimatization- Definition, concept, factors affecting</li> <li>• acclimatization</li> </ul> <p><b>Unit - III</b></p> <ul style="list-style-type: none"> <li>• Pure line selection- uses of pure line, merits, demerits, achievements.</li> <li>• Mass selection- Definition, genetic basis, main features, positive and negative selection, detailed procedure of development of variety by mass selection, its merits, demerits, achievements.</li> <li>• Handling of segregating population through Pedigree method- detailed</li> </ul>	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<ul style="list-style-type: none"> <li>• procedure of pedigree method, its merits, demerits, achievements.</li> <li>• Handling of segregating population through Bulk method- Concept of bulk method, short term, long term, its application, procedure of bulk method, its merits, demerits, achievements</li> <li>Handling of segregating population through Single seed descent method-concept of SSD method, its application, detailed procedure of SSD method, its merits, demerits, achievements.</li> </ul> <p><b>Unit – IV</b></p> <ul style="list-style-type: none"> <li>• Back cross method- Definition of backcross, its objective, requirements and applications of backcross method, procedure for transfer of dominant gene.</li> <li>• Back cross method- procedure for transfer of recessive gene, merits, demerits, achievements of backcross method.</li> <li>• Methods of breeding in cross pollinated crops- list of plant breeding methods for cross pollinated crops.</li> <li>• Modes of selection- Recurrent selection, its types and its procedure.</li> <li>• Hybridization techniques- Definition, aim and objectives, types. of hybridization, steps and procedure of hybridization programme Wide hybridization- Definition, types, main features, interspecific and intergeneric</li> </ul>	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<ul style="list-style-type: none"> <li>• hybridization, its examples, incompatibility barriers for wide hybridization, techniques for overcoming incompatibility barriers, achievements</li> </ul> <p><b>Unit – V</b></p> <ul style="list-style-type: none"> <li>• Composite and synthetic varieties- Definition, steps for development of composites and synthetics, procedure of developing composites and synthetics, its merits, demerits and achievements.</li> <li>• Breeding methods in asexually propagated crops: List of breeding methods for asexually propagated crops.</li> <li>• Clonal selection- Definition, features of asexually propagated crops, procedure of clonal selection, its merits and demerits Hybridization- steps and procedure of hybridization in clonal crops</li> <li>• Mutation breeding method and its uses – Definition of mutation breeding, conditions in which mutation is rewarding, procedure of mutation breeding for seed and vegetatively propagated crops, applications, its merits, demerits and achievements.</li> <li>• Polyploidy in relation to plant breeding- Definition of haploid, monoploid, diploid, polyploid, genome, heteroploidy, annuploidy, euploidy, types of</li> </ul>				



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<ul style="list-style-type: none"> <li>annuploidy its application in crop improvement, types of polyploidy (natural occurring and artificial) and its role in crop improvement, effects of polyploidy, its application in crop improvement and limitation.</li> <li>Heterosis- Definition, heterosis and hybrid vigour, effects and estimation of heterosis, genetic basis/theories of heterosis. Inbreeding depression-Definition, effects of inbreeding.</li> </ul>				
17	<p style="text-align: center;"><u>Second Year</u>            SEMESTER – III            Subject Code:            VOC311            Skill Specific- VII            (Insect Ecology and Integrated Pest Management)</p>	III	<p><b>Unit – I</b></p> <ul style="list-style-type: none"> <li>Definition of Insect Ecology, Scope, Environment and its components.</li> <li>Effect of abiotic factors – temperature and moisture, humidity, rainfall, light, atmospheric pressure and air currents.</li> <li>Effect of biotic factors – food competition, natural and environmental resistance</li> </ul> <p><b>Unit – II</b></p> <ul style="list-style-type: none"> <li>Concepts of balance of life in nature, biotic potential and environmental resistance and causes for outbreak of pests in agro- ecosystem.</li> <li>Pest surveillance and it's types and pest forecasting. Categories of pests. Natural and Applied pest control. IPM – Introduction, Importance, Scope,</li> </ul>	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<ul style="list-style-type: none"> <li>• Concepts, Principles, tools and limitations of IPM.</li> </ul> <p><b>Unit - III</b></p> <ul style="list-style-type: none"> <li>• Host plant resistance and cultural methods of pest control</li> <li>• Mechanical, Physical and Legislative methods of pest control.</li> <li>• Biological- parasitoids, predators and transgenic plant pathogens such as bacterial, fungi and viruses.</li> </ul> <p><b>Unit - IV</b></p> <p>Chemical control – importance, hazards and limitations. Classification of insecticides, toxicity and formulations Examples of important insecticide groups - Botanical insecticides – Neem based products. Cyclodienes, Organophosphates, Carbamates, Synthetic pyrethroids, Novel insecticides, Pheromones, Nicotinyln insecticides, Chitin synthesis inhibitors, Phenyl pyrazoles, Avermectins, Macrocyclic lactones, Oxadiazines, Thiourea derivatives, Pyridine azomethines, Pyrroles etc, Nematicides, Rodenticides, Acaricides and Fumigants. Insecticides Act 1968- important provisions.</p> <p><b>Unit - V</b></p> <ul style="list-style-type: none"> <li>• Application techniques of spray fluids. Phytotoxicity of insecticides. Symptoms of poisoning, first aid and antidotes.</li> </ul>				



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<ul style="list-style-type: none"> <li>Recent methods of pest control. Repellants, Antifeedants, hormones, attractants, gamma radiation and genetic control.</li> </ul>				
18	<u>Second Year SEMESTER – III</u> Subject Code: VOC312 Skill Specific-VIII (Crop Production Technology-I (Kharif crops))	III	<b>Unit – I</b> Cereals – Rice, maize, kharif, sorghum, pearl millet and minor millet. <b>Unit – II</b> Pulses – Pigeon pea, mungbean, urdbean, cowpea, kidney bean and horse gram <b>Unit – III</b> Oilseeds – Groundnut, sesame, soybean and Niger <b>Unit – IV</b> Fiber crops – cotton and jute <b>Unit – V</b> Forage crops – Sorghum, cowpea, pearl millet and maize: Grasses–Napier and Marvel	Professional Ethics	----	Environment	-----
19	<u>Second Year SEMESTER – III</u> Subject Code: VOC313 Skill Specific-IX (Morphology of Angiosperms)	III	<b>Unit – I</b> Basic body plan of flowering plant, modular type of growth, diversity of plant forms – Herbs, Shrubs, Trees, Climbers; annuals, biennials and perennials. <b>Unit – II</b> <b>Morphology of vegetative organs:</b> a) <b>Root:</b> Characteristics, functions, regions of root, types – tap and adventitious, modification of root for	Professional Ethics	-----	Environment	-----





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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			b) storage, mechanical support (stilt root) and vital functions (Pneumatophore). c) <b>Stem:</b> Characteristics, functions, modification – underground, sub aerial and aerial <b>Unit – III</b> a) <b>Leaf:</b> Parts of typical leaf, phyllotaxy, types (simple and compound), diversity in shape and size, venation and modifications of leaf.  <b>b) Inflorescence:</b> Racemose, cymose and special types <b>Unit – IV</b> <b>Morphology of reproductive organs:</b> <b>Flower:</b> Definition, parts of typical flower, forms of thalamus, androphore, gynophore, gynandrophore, insertion of floral whorls on thalamus (hypogyny, perigyny and epigyny), structure, function and modification of calyx, corolla, androecium, gynoecium, aestivation and placentation <b>Unit – V</b> Fruit: Types of fruits Fruit and Seed dispersal strategies	-----	-----	Environment	-----
20	<u>Second Year</u> SEMESTER – IV Subject Code: VOC401	IV	Unit 1: Writing: Definition, Concept, elements, process, types, Technical Writing & Literary Writing, Technical Writing – Business Writing	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
	Business Communication		Unit 2: Business Writing – Concept, Elements, Relevance and Components Unit 3: Job Applications & Resume, Email Unit 4: Letter Writing: Concept, different types of letters Unit4: Report Writing: Concept, different types reports	Professional Ethics	-----	-----	-----
21	<u>Second Year</u> SEMESTER – IV Subject Code: VOC402 Financial Management and Accounts	IV	<b>Unit I: Introduction to Financial Management:</b> Concept of business finance, Goals & objectives of financial management, Sources of financing – LONG TERM: shares, debentures, term loans, lease & hire purchase, retained earnings, public deposits, bonds (Types, features & utility), SHORT TERM: bank finance, commercial paper, trade credit & bills discounting, INTERNAL: Retained earnings. <b>Unit II: Introduction to Financial Accounting, Book keeping &amp; Recording:</b> Meaning, Scope and importance of Financial Accounting, Financial Accounting – concepts and conventions, classification of accounts, Rules and principles governing Double Entry Book keeping system, Meaning, Preparation of Journal, Ledger, Cash book & Trial balance. (Practical application on tally)	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<p><b>Unit III: Financial Statement Preparation, analysis &amp; Interpretation:</b> Preparation of financial statement and Profit &amp; loss account, balance sheet, ratio analysis – classification of various ratios. (Calculation on Excel)</p> <p><b>Unit IV: Working Capital Management:</b> Concept of working Capital, significance, types. Adequacy of working capital, Factors affecting working capital needs, Financing approaches for working capital, Methods of forecasting working capital requirements, meaning &amp; importance of accounts receivable (Excel based)</p> <p><b>Unit V: Time value of Money &amp; Capital Budgeting:</b> Concept of time value of money, Compounding &amp; discounting; Future value of single amount &amp; annuity, present value of single amount &amp; annuity; Practical application of time value technique. Capital budgeting – Nature and significance, techniques of capital budgeting =- Pay Back Method, Accounting rate of return, Internal Rate of Return, DCF, Net present value and profitability index (Application on Excel) Financial, Cost &amp; Management Accounting by Dr.P. Pariasamy, HH Publication</p>	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
22	<u>Second Year</u> SEMESTER – IV Subject Code: VOC403 Industrial Management and Safety	IV	<p><b>UNIT I:</b> Human Resource Philosophy - Changing environments of HRM - Strategic human resource management - Using HRM to attain competitive advantage - Trends in HRM - Organization of HR departments - Line and staff functions - Role of HR Managers.</p> <p>Employment planning and forecasting – Recruitment, selection process- Building employee commitment: Promotion from within – Sources- Induction.</p> <p><b>UNIT II:</b> Orientation &amp; Training: Orienting the employees, the training process, need analysis, Training - techniques, Developing Managers : Management Development - On-the-job and off-the-job Development techniques using HR to build a responsive organization. Management Developments - Performance appraisal in practice. Managing careers: Career planning and development - Managing promotions and transfers.</p> <p><b>UNIT III:</b> Establishing Pay plans: Basics of compensation - factors determining pay rate - Current trends in compensation - Job evaluation – Incentives- Practices in Indian organisations. 868 Statutory benefits - non-statutory (voluntary) benefits - Insurance benefits - retirement benefits</p>	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			and other welfare measures to build employee commitment. <b>UNIT IV:</b> Labour relations -Employee security - Industrial Relation-Collective bargaining: future of trade unionism. Discipline administration - grievances handling - managing dismissals and separation. Labour Welfare: Importance & Implications of labour legislations - Employee health - Auditing - Future of HRM function.				
23	Second Year SEMESTER - IV Subject Code: VOC411 Skill Specific- X (Pest of Horticultural Crops and their Management)	IV	Unit - I <b>Citrus:</b> - Lemon butterfly, White fly, Black fly, Leaf miner, Fruit sucking moth, (Eudocima fullonica C, E. materna L. Achoea janata L.), Citrus psylla, Citrus aphids, Mealy bug, Citrus thrips, Scale insects <b>Mango:</b> -Mango stem borer, Mango stone weevil, Mango fruit fly, Mealy bugs, Mango hoppers, Shoot borer, Thrips, Slug caterpillar, Midge fly, Leaf gall <b>Grapevine:</b> -Flea beetle /Udadya beetle, Thrips, Stem Girdler, Mealy bug, Mite <b>Guava:</b> -Fruit fly, Spiraling white fly, Bark eating caterpillar Fruit Borers- ( Congethes (Dichocrocis) punctiferalis, Deudorix (Virachola) isocrates, Rapala varuna,) Green Scale, Mealy bug. Unit - II	Professional Ethics	-----	Environment	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<p><b>Banana:</b> -Root stock weevil/Rhizome weevil, Pseudostem borer, Fruit rust thrips, Aphids, Tingid or Lace wing bug, Leaf eating caterpillar.</p> <p><b>Papaya:</b> -Papaya mealy bugs, White fly, Green peach aphid, Ash weevils,</p> <p><b>Sapota:</b> -Chiku moth / Sapota Leaf Webber, Sapota seed borer, Fruit fly, Stem borer, Hairy caterpillar, Leaf folder, Bud borer.</p> <p><b>Coconut:</b> -Rhinoceros beetle, Black headed caterpillar, Red palm weevil, Eriophyid mite, Rat.</p> <p><b>Aracanut:-</b> Spindle Bug, Inflorescence Caterpillar,</p> <p><b>Cashew nut:</b> -Tea mosquito bug, Cashew stem and root borer, Thrips Unit – III</p> <p><b>Apple:</b> -Mites, Codling moth,</p> <p><b>Fig:</b> -Jassids, Mites</p> <p><b>Ber:</b> - Ber fruit borer, Ber fruit fly</p> <p><b>Aonla:-</b> Bark Borer,</p> <p><b>Pomogranate:-</b>Anar caterpillar, Fruit sucking moth (Eudocima fullonica, Eudocima materna, Achoea janata L.,) Thrips, Shot hole borer, Bark eating caterpillar, Mealy bug, Whitefly, Aphids,</p> <p><b>Brinjal:-</b> Brinjal shoot &amp; fruit borer, Jassids /leaf hopper, Aphids, White fly, Red Spider Mites, Hadda Beetle, Brinjal leaf roller, Lace wing bug, Stem borer</p>	-----	-----	Environment	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<p><b>Okra:-</b> Shoot &amp; fruit borer, Leafhoppers, Aphids, White fly, Leaf Roller, Red Spider Mite, Helicoverpa, Flea beetle, Leaf miner (Liriomyza)                      Unit – IV</p> <p><b>Tomato :-</b> Fruit borer, Leaf miner- Liriomyza and Tuta absoluta                      Aphids, Thrips, White Fly, Mites</p> <p><b>Chilli:-</b> Thrips, Fruit borer (Helicoverpa), Mites.</p> <p><b>Potato:-</b> Potato tuber moth, Cutworm, Thrips, Mites, Jassids  <b>Sweet potato:-</b> Sweet potato weevil, Sweet potato leaf eating caterpillar / Sphinx caterpillar.</p> <p><b>Cruciferous crops (Cauliflower, Cabbage, Broccoli and Knolkol):-</b> Diamond back moth, Aphids, Painted bug, Cabbage butterfly, Leaf eating caterpillar, Flea beetle, Head borer and Mustard saw fly                      Unit – V</p> <p><b>Cucurbitaceous vegetables:-</b> Fruit Fly, Aphids, Leaf miner, whitefly, Thrips, Pumpkinn beetle, Blister beetle</p> <p><b>Colocassia and Moringa:-</b> Leaf eating catterpillar, Webworm, Stem borer, Spodoptera and Aphid,</p> <p><b>Turmeric and Ginger:-</b> Rhizome fly, Shoot borer, Rhizome scale, Leaf roller, Thrips  <b>Onion and Garlic:-</b> Onion and garlic thrips, <b>Coriander :-</b> Mites, Aphids</p>	-----	-----	Environment	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<b>Curry leaf:-</b> Scale insect, Psylla, Leamon butterfly <b>Black pepper:-</b> Pollu beetle/Floes beetle, Mealy bug, <b>Rose, Gerbera, carnation:-</b> Thrips, Mites, White Fly, Bud borer, Leaf miner <b>Ornamental:-</b> Snail and slugs,Mealy bug, Scale insects, <b>Tea:-</b> Tea Green leaf Hopper, Tea mosquito bug, Mites <b>Coffee:-</b> Coffee seed borer, Coffee berry borer.	-----	-----	Environment	-----
24	Second Year SEMESTER – IV Subject Code: VOC412 Skill Specific- XI (Crop Production Technology-II (Rabi crops))	IV	Unit – I Cereals – Wheat, sorghum, barley and maize (grain corn, sweet corn and baby corn) Pulses – Chickpea, lentil, pea, French bean Unit – II Oilseeds – Sunflower, safflower mustard and linseed Sugar crop – Sugarcane and sugar beet Unit – III Other crops – Potato, tobacco and sweet potato Unit – IV Medicinal and aromatic crops- mentha, lemon grass and citronella	Professional Ethics	-----	Environment	-----





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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
25	<u>Second Year</u> SEMESTER – IV Subject Code: VOC413 Skill Specific- XII (Taxonomy of Angiosperms)	IV	Unit- I 1. Bentham and Hooker’s system of classification up to species level, its merits and demerits. Unit- II 1. Concept of Binomial Nomenclature and its advantages . 2. Concept of genus, species and epithet. Unit- III Study of the following families: systematic position, floral formula, floral diagram, common examples and their economic importance. i. Malvaceae ii. Fabaceae (Papilionaceae) iii. Caesalpiniacea iv. Amaranthaceae Unit- IV i. Solanaceae ii. Liliaceae iii. Poaceae iv. Brassicaceae Unit- V i. Cucurbitaceae ii. Apiaceae iii. Astaraceae iv. Convolvulaceae	Professional Ethics	-----	Environment	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
26	<u>Third Year</u> SEMESTER – V Subject Code: VOC501 Personality Development & Stress Management	V	Unit -I: Personality – Definition, Concept, facets, aspects, dimensions, types Unit- II: Relationship Management: Self, Environment, Attitude, Self-Esteem, Motivation, Need base analysis, Assertiveness Unit-III: Body Language & Learning Life Skills, Intrapersonal Skills, Interpersonal Skills, Soft Skills Unit- IV: Stress Management Unit- V: Leadership & Emotional Intelligence – concept, types, facets, skills, qualities	Professional Ethics	-----	-----	-----
27	<u>Third Year</u> SEMESTER – V Subject Code: VOC502 Generic Skills- V (Pests of Crops and Stored Grain and their Management)	V	Unit – I <b>Distribution, biology, nature of damage and management of insect pests of .... Cereals</b> Rice - Paddy stem borer, Green leaf hopper, Brown plant hopper, White backed plant hopper, Gall midge, Paddy grasshopper, Blue beetle, Caseworm, Armyworm, Gundhi bug, Hispa, Leaf folder Sorghum – Shoot fly, Stem borer, Aphids, Delphacids, Grasshopper, Earhead midge, Earhead caterpillars Maize – Shoot fly, Stem borer, Armyworm, Cob earworm	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			Bajra – Shoot fly, Blister beetle Wheat – Stem borer, Aphids, Termites, Minor millets - Unit – II <b>Pulses – Pigeon pea, chickpea, mungbean, urdbean, cowpea, pea</b> Pigeon pea – Pod borer, Plume moth, Pod fly, Spotted pod borer, Leaf webber, Mites Chickpea – Gram pod borer, Aphids, Cutworm Mung and Urdbean – Aphids, Leaf eating caterpillar, Semilooper, Pod borer Cowpea and Pea – Aphids, Blue butterfly, Pod borer Unit – III <b>Oilseeds -</b> Groundnut – Leaf miner, Hairy caterpillar, Tobacco leaf eating caterpillar, Aphids, Thrips, White grub, Pod sucking bug Castor – Semilooper, Capsule borer, Jassids, Tobacco leaf eating caterpillar Sunflower – Capitulum borer, Hairy caterpillar, Jassids, Thrips, Whitefly, Stem borer Safflower – Aphids, Capitulum borer,	-----	-----	Environment	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			Guzia weevil Mustard – Aphids, Sawfly, Leaf webber Linseed – Gall fly Soybean – Stem fly, Girdle beetle, Leaf miner, Tobacco leaf eating caterpillar, Whitefly, Semilooper, Gram pod borer Sesamum – Til hawk moth, Gall fly, leaf eating caterpillar Niger – Semilooper, Gram pod borer Unit – IV <b>Fiber crops –</b> Cotton – Aphids, Jassids, Thrips, Whitefly, Mealy bugs, Spotted bollworm, American bollworm, Pink bollworm, Tobacco leaf eating caterpillar, Leaf folder, Semilooper, Red cotton bug, Dusky cotton bug, Grey weevil Sunhemp and Mesta – Sunhemp hairy caterpillar <b>Sugarcane crops</b> Sugarcane – Early shoot borer, Internode borer, Top shoot borer, Whitefly, Pyrilla, Woolly aphids, Mealy bug, Scale insect, Termites, White grub <b>Non-insect pests of above crops –</b> Crabs, Snails and Slugs, Mille pedes, Mites, Rats and squirrels	-----	----	Environment	-----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
			Unit – V <b>Stored grain pests</b> - Biology and damage of Primary and Secondary pests Primary store grain pests- Internal feeders - Rice weevil, lesser grain borer, pulse beetle and Angoumois grain moth External feeders - khapra beetle, Indian meal moth Secondary store grain pests – Rust red flour beetle, Saw toothed grain beetle, Long headed beetle Primary and Secondary store grain pests - Rice moth Non-insect pests, mites, rodents, birds and microorganisms associated with stored grain and their management Preventive and curative methods of stored grain pests Storage structure and methods of grain storage and fundamental principles of grain store management.	-----	-----	Environment	-----
28	<u>Third Year</u> SEMESTER – V Subject Code: VOC503 Generic Skills- VI (Technology of Milk and Milk Products)	V	Unit – I Present status of dairy industry in India Definition of milk, composition of milk of different livestock species Physico-chemical properties of milk Unit – II Factors affecting yield and composition of milk	Professional Ethics	-----	Environment	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			Microbial quality of raw milk and standards for different market milk Nutritional importance of milk and its constituents Unit – III Reception, standardization and homogenization of milk Pasteurization of milk and its methods Chilling, storage and marketing of milk Unit – IV Classification and composition of Indigenous milk products Quality management standard and system (BIS/ISI standards, PFA rules, AGMARK, HACCP, FSSAI) International requirements for export of milk and milk products Unit – V Preservation of milk and milk products by physical, chemical, biological and herbal preservatives Utilization of dairy by-products like whey and high acid milk Packaging of milk and milk products with modern techniques	Professional Ethics	-----	Environment	-----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
29	<p style="text-align: center;"><u>Third Year</u> SEMESTER – V Subject Code: VOC511 Skill Specific- XIII (Diseases of Field and Horticultural Crops and their Management- I)</p>	V	Unit – I Symptoms, etiology, disease cycle and management of major diseases of following crops <b>Field crops:</b> Rice, Maize, Sorghum, Bajara, Finger millet Unit – II <b>Oilseed:</b> Groundnut <b>Pulses:</b> Soybean , Black & green gram, Pigeonpea <b>Cash Crop:</b> Caster, Tobacco Unit – III <b>Horticultural Crops:</b> Guava, Banana, Papaya, Pomegranate Unit – IV <b>Cruciferous vegetables:</b> Cruciferous vegetables, Brinjal, Tomato, Okra, Beans Ginger, Colocasia Unit – V <b>Plantation Crops:</b> Coconut, Tea, Coffee	Professional Ethics	-----	Environment	-----
30	<p style="text-align: center;"><u>Third Year</u> SEMESTER – V Subject Code: VOC512 Skill Specific- XIV- Elective-I (Weed Management)</p>	V	Unit – I Introduction and importance of weeds Characteristics of weeds Harmful and beneficial effects of weeds on ecosystem. Classification of weeds, Shift of weed flora Unit – II Reproduction and dissemination of weeds Classification of herbicides Concept of adjuvant and surfactants Herbicide formulation and their use Unit – III	Professional Ethics	-----	-----	-----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
			Introduction to mode of action of herbicides Introduction to herbicide selectivity Allelopathy and its application in weed management Unit – IV Bio herbicides and their application in Agriculture Concept of herbicide mixture and its utility in Agriculture Herbicide compatibility with Agrochemicals Unit – V Herbicide compatibility with fertilizers Integration of herbicides with non-chemical methods of weed management Herbicide resistance and its management				
31	Third Year SEMESTER – V Subject Code: VOC512 Skill Specific- XIV- Elective- II (Agribusiness Management)	V	UNIT I Agribusiness: Meaning of Agribusiness, Definition of Agribusiness, Transformation of agriculture into agribusiness, Various stake holders and components of Agribusiness systems. Agricultural Input Sector, Production Sector, Processing Manufacturing Sector, Distribution-Marketing Sector. Importance of Agri business in Indian Economy New Agricultural Polici National Agril. Policy, National Seed Policy, National Price Policy, National Food Processing Policy, National Foreign Trade Policy,	Professional Ethics	-----	Environment	-----





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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<p>National Fishery Policy, National Food Security Policy, National Food &amp; Biotech, National Transportation of Food, National Nutrient Based Subsidy</p> <p>Agro-based Industries: Importance of Agro based Industries, Need of Agro based Industries, Classification of Agro based Industries, Types of Agro based Industries- Sugar Mills, Cotton Ginning Mills, Dal Mills, Rice Mills, Poha Mills, Fruit Processing Industries etc. Institutional Arrangement-Ministry of Agriculture(GOI), Financial Institutions, NABARD, NCDC, NDDB, NCUI, APEDA, ICAR, NAFED, FCI, CWC, NHM, CFTRI,EPO</p> <p>UNIT II</p> <p>Agricultural Value Chain: Value Chain Concept Primary activities and support activities and their linkages, Supply chain/s. Value Chain, Vertical Corporation, Horizontal relation, Nature of Association. Business Process and Agri business Supply Chain- Production, Processing/Manufacturing, Wholesaling, Retailing, Logistics, Supply Network</p> <p>Business Environment PEST</p>				



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
			Analysis(Political, Economic, Social & Technological) SWOT Analysis(Strengths, Weaknesses Opportunities and Threats) Management Functions: Roeland Activities, Organization Culture, Functions of Management- Planning, Organizing, Directing, Controlling, Coordinating, Financing Capital Management and Financial Management Definition of capital, Types of capital, Assess capital, Shares, Debentures, Ploughing back of earnings, Managingagent, Public deposit, Hire purchase, Leasing, Trade credit Importance of Capital and Financial Management Balance Sheet-Meaning, Concept, Importance, Precautions in preparing the balance sheet of business farm Study of different test Ratios-Current Ratio, Intermediate Ratio, Net Capital Ratio, Current Liability Ratio, Debt Equity Ratio, Equity Value Ratio				



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
32	<u>Third Year</u> SEMESTER – V Subject Code: VOC512 Skill Specific- XIV- Elective- III (Food Safety and Standards)	V	Food quality: physical, nutritional, microbial and sensory, quality Control Hazards in supply chain, biological, chemical and physical hazards, natural contaminants, allergens, Food adulteration, toxicities due to hazards, Food infection and intoxication, risk analysis, and detection and epidemiology of food borne pathogens ISO Food Safety Management Systems. potential risks of food borne bioterrorism, bioterrorism protection measures, Personal hygiene and sanitary food handling. Quality management and quality assurance: Total quality management, good manufacturing practices, good agricultural practices, good laboratory practices; ISO.HACCP: Principles, implementation; Plan documentation, types of records; Auditing: Surveillance, audit, mock audit, third party quality certifying audit, Certification, certification procedures, certifying bodies, accrediting bodies, international bodies. Global Food safety Initiative; BRC, SQF, SGS, Food Codex; Export import policy, Labeling issues. export documentation; and food safety.	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
33	Third Year SEMESTER – VI Subject Code: VOC601 Entrepreneurship Development	VI	<p><b>Module – I Introduction :</b></p> <ul style="list-style-type: none"> <li>• Concept, meaning and definition of entrepreneur and entrepreneurship. Importance and significance of growth of entrepreneurial activity. Characteristics and qualities of entrepreneurs</li> <li>• Classification and types of entrepreneurs. Women entrepreneurs</li> <li>• Theories of entrepreneurship</li> <li>• Contribution of Ms. Clelland and Joseph Schumpeter</li> </ul> <p><b>Module –II: Entrepreneurship and EDP</b></p> <ul style="list-style-type: none"> <li>• Factors influencing entrepreneurial development and motivation. Role of culture in entrepreneurial development.</li> <li>• Entrepreneurial development program (EDP), Managing the problems faced by entrepreneurs</li> <li>• Development of women entrepreneurs-with reference to SHGs</li> <li>• Options available to entrepreneurs, ancillarisation franchising and outsourcing. Cases on takeover,</li> <li>• mergers and acquisitions in India and at global level.</li> <li>• Social Entrepreneurship-Definition, importance and social responsibilities</li> <li>• NGOs</li> </ul> <p><b>Module-III: Entrepreneurial Development</b></p>	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<ul style="list-style-type: none"> <li>• Idea generation – sources and methods Identification and classification of ideas. Environmental Scanning and SWOT analysis Preparation of project plan – points to be considered</li> <li>• Components of an ideal business plan – market plan, financial plans, operational plan, and HR plan. Project formulation – project report significance and contents</li> <li>• Project appraisal – Aspects and methods:</li> </ul> <p><b>Module-IV: Small and Medium Enterprises:</b></p> <ol style="list-style-type: none"> <li>1. Meaning and definition (evolution) Role and importance</li> <li>2. Policies governing SMEs Organizational structure Steps in setting up a small unit</li> <li>3. SME funding. Requirements of capital (fixed and working), Factors determining capital requirements, Importance of fixed and working capital, Working capital management, Sources of finance for SME'S. Taxation benefits</li> <li>4. SIDBI and SISI – Their role in the development of SMEs. Taxation benefits SIDBI and SISI – Their role in the development of SMEs</li> </ol>	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			5. Marketing mechanism in SMEs Problems of SMEs and prospects Turnaround strategies for SMEs <b>Module- V: Project Report</b> 6. Meaning and Concept, Standard method of preparing Project Report, Content of Project				
34	Third Year SEMESTER – VI Subject Code: VOC602 Generic Skills- VII (Agricultural Economics)	VI	<b>Unit I: Agricultural Development</b> <ul style="list-style-type: none"> <li>• Role and Importance of Agriculture in Economic Development.</li> <li>• Linkages between Agriculture and Non-Agriculture sector.</li> <li>• Changes in Indian Cropping Pattern.</li> <li>• Agriculture Resources in India.</li> <li>• Concept of Contract Farming</li> </ul> <b>Unit II: Technology in Agriculture</b> <ul style="list-style-type: none"> <li>• Technology in Agriculture – Traditional techniques and modern techniques.</li> <li>• Water Technology (Green Revolution).</li> <li>• Productivity of Indian Agriculture</li> <li>• Dry Land Farming.</li> <li>• Food Security in India.</li> </ul> <b>Unit III: Agricultural Finance -</b> <ul style="list-style-type: none"> <li>• Importance of Agricultural finance.</li> <li>• Role of Institutions in Agricultural finance.</li> </ul>	Professional Ethics	-----	Environment & Sustainability	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<ul style="list-style-type: none"> <li>• Rural credit structure – Demand, Supply and Sources.</li> <li>• Agricultural Subsidy.</li> <li>• Agricultural Price Policy – Importance and Objectives.</li> </ul> <p><b>Unit IV: Agricultural Marketing and Price Analysis -</b></p> <ul style="list-style-type: none"> <li>• Agricultural Marketing – Structure and Analysis.</li> <li>• Agricultural Marketing Functions – Processing and Transportation.</li> <li>• Problems of Agricultural Marketing.</li> <li>• Price Stabilization – Measures and Policies.</li> </ul> <p><b>Unit V: Fifty Years of Indian Agriculture-</b></p> <ul style="list-style-type: none"> <li>• An Overview of Agricultural Development.</li> <li>• Unemployment in Rural Economy.</li> </ul> <p>Globalization of Indian Economy and Its impact on Indian Agriculture</p>	Professional Ethics	-----	Environment	----- -
35	<p style="text-align: center;"><u>Third Year</u> SEMESTER – VI Subject Code: VOC603 Generic Skills-VIII (Sheep, Goat and Poultry Production</p>	VI	<p><b>Unit – I</b></p> <ul style="list-style-type: none"> <li>• Importance of sheep, goat and poultry production in national economy</li> <li>• Common terminologies used in sheep, goat and poultry production</li> <li>• Classification and study of Indigenous and exotic sheep breeds</li> </ul>	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<p><b>Unit - II</b></p> <ul style="list-style-type: none"> <li>• Classification and study of Indigenous and exotic goat breeds</li> <li>• Classification and study of Indigenous and exotic poultry breeds</li> <li>• Breeding seasons, mating systems, rearing methods and housing systems of sheep and goat</li> </ul> <p><b>Unit - III</b></p> <ul style="list-style-type: none"> <li>• Digestive system and digestion absorption of nutrients in fowl</li> <li>• Principles and practices of sheep and goat feeding, flushing of ewes and doves</li> <li>• Care and management of pregnant ewes/does, lambs/kids and rams/bucks</li> </ul> <p><b>Unit - IV</b></p> <ul style="list-style-type: none"> <li>• Methods of rearing, feeding and management of chicks, pullets, layers and broilers</li> <li>• Importance, composition and utilization of sheep and goat milk</li> <li>• Marketing of sheep and goat</li> <li>• Selection of eggs, incubation, hatching and brooding in poultry</li> </ul> <p><b>Unit - V</b></p> <ul style="list-style-type: none"> <li>• Preservation, grading, marketing of eggs and its economics</li> <li>• Study of diseases of sheep, goat and poultry</li> </ul>				





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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<ul style="list-style-type: none"> <li>Vaccination and health cover in sheep, goat and poultry</li> </ul>				
36	<p style="text-align: center;"><u>Third Year</u> SEMESTER – VI Subject Code: VOC611 Skill Specific- XV (Diseases of Field and Horticultural Crops and their Management- II)</p>	VI	<p><b>Unit - I</b>  <b>Symptoms, etiology, disease cycle and management of major diseases of following crops. Field crops</b>  Wheat: Rusts, loose smut, Karnal bunt, powdery mildew, Alternaria blight, and ear cockle  Sugarcane: Red rot, Smut, Wilt, Grassy shoot, Ratoon stunting and Pokka Boeng  <b>Unit - II</b>  <b>Oilseed</b>  Sunflower: Sclerotinia stem rot and Alternaria blight, Rust, Downy Mildew  Mustard: Alternaria blight, White rust, Downy mildew and Sclerotinia stem rot  <b>Pulses</b>  Gram: wilt, grey mould and Ascochyta blight  Lentil: rust and wilt  Linseed :Alternaria bud blight, Rust ,Powdery mildew  Pea: Downy mildew, Powdery mildew and Rust, wilt <b>Cash Crop</b>  Cotton: Root rot, Wilt, Anthracnose, and black arm, Dahiya diseases, leaf curl of cotton, 2-4-D injury  Unit - III</p>	Professional Ethics	-----	-----	-----



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<p><b>Horticultural Crops</b>  Mango: Die back, Anthracnose, Mango-malformation, bacterial blight and powdery mildew, Spongy tissue, Red rust, Pink diseases, Loranthus, Stone graft Mortality, Lime induced chlorosis  Citrus : Citrus canker, Gummosis, Fruit rot, Citrus greening, Anthracnose,  Tristeza, Citrus Exocortis, Scab of citrus, Mottle leaf of citrus  Grape vine: Downy mildew, Powdery mildew, Anthracnose, Bacterial Canker, Grape fan-leaf virus  Apple: Scab, Powdery mildew, Fire blight and Crown gall, Mosaic  Peach: leaf curl  Strawberry: Leaf spot</p> <p><b>Unit – IV</b>  <b>Vegetables</b>  Potato: Early and late blight, black scurf, leaf roll, and Mosaic  Cucurbits: Downy mildew, powdery mildew, wilt, Angular leaf spot, Mosaic, TOSPO virus  Onion: Purple blotch, and Stemphylium blight, Downy mildew, Smut, Smudge, Erwinia rot  Garlic : Neck and bulb rot, and Stemphylium blight, Blemish, Black mould  Chilli : Anthracnose and fruit rot, Wilt and leaf curl</p>				



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			Coriander : Stem gall, Powdery mildew, Wilt Turmeric: leaf spot <b>Unit - V</b> <b>Ornamental Crops</b> Marigold :Botrytis blight, Alternaria blight Rose: Dieback, Powdery mildew and Black leaf spot				
37	Third Year SEMESTER – VI Subject Code: VOC612 Skill Specific- XVI- Elective- I (Management of Beneficial Insects)	VI	<b>Unit - I</b> <ul style="list-style-type: none"> <li>• Importance of beneficial insects in Agriculture,</li> <li>• Honeybee, Silkworm, Lac insects, Bioagents as natural enemies, Various Institutes related to beneficial insects</li> <li>• <b>Apiculture:</b> Introduction and history of Beekeeping</li> <li>• Bee keeping, morphology and anatomy, bee biology, Pollinating plants and their cycle, bee conservation</li> <li>• Commercial methods of bee rearing, equipments used, seasonal management of bees</li> <li>• Bee hives and their description, Bee pasturage, bee foraging, behaviour and communication</li> </ul> <b>Unit - II</b> <ul style="list-style-type: none"> <li>• Enemies- Insect pests and diseases of honey bee and their management</li> </ul> <b>Sericulture:</b> Related terminologies, History and development of				



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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<ul style="list-style-type: none"> <li>• silkworms in India, types of silkworm, voltinism and biology of silkworm</li> <li>• Mulberry cultivation, crop varieties, method of harvesting and preservation of mulberry leaves</li> <li>• Rearing house and rearing appliances of mulberry silkworm, methods of disinfection and hygiene</li> </ul> <p><b>Unit - III</b></p> <ul style="list-style-type: none"> <li>• Silkworm rearing, mounting, harvesting and marketing of cocoons</li> <li>• Pest and diseases of silkworm and their management</li> <li>• <b>Lac culture:</b> Species of lac insect, morphology, biology, behavior, host plants</li> <li>• Lac production and its uses, Types of lac- seed lac, button lac, shellac, and lac-products</li> </ul> <p><b>Unit - IV</b></p> <ul style="list-style-type: none"> <li>• <b>Biocontrol agents</b> (Natural Enemies): Introduction of bioagents, Ideal characteristics of bioagents, Successful examples of biological control</li> <li>• General classification: Important insect orders bearing predators and parasitoids used in pest control</li> <li>• Identification of major parasitoids and predators commonly used in</li> </ul>	Professional Ethics	-----	Environment	-----

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				Professional Ethics	Human Values	Environment, Sustainability	Gender
			<p>biological control of crop pests.</p> <ul style="list-style-type: none"> <li>• Major parasitoids: Trichogramma sp., Chelonus blackburni, Cotesia (Apanteles) sp., Bracon sp., Epiricania melanoleuca, Goniozus nephantidis, Campoletis chloridae,</li> <li>• Major predators: Chrysoperla sp., Australian lady bird beetle-</li> <li>• Cryptolaemusmontrouzieri</li> <li>• Weed killers: Zygommatra bicolorata, Neochetina spp.</li> </ul> <p><b>Unit - V</b></p> <ul style="list-style-type: none"> <li>• Mass multiplication and field release techniques of some important parasitoids: T. chilonis, Chelonus blackburni, Cotesia / Bracon, Goniozus nephantidis, Epiricania melanoleuca</li> <li>• Mass multiplication and field release techniques of important predators: Chrysoperla sp., Australian lady bird beetle,</li> <li>• Weed predators/killers: Zygommatra bicolorata, Neochetina sp.</li> <li>• Important species of pollinator and scavengers with their importance</li> </ul>				



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
38	<u>Third Year</u> SEMESTER – VI Subject Code: VOC612 Skill Specific- XVI- Elective- II (Landscaping)	VI	Garden components, adornments, lawn making, rockery, water garden, walk-paths, bridges, other constructed features etc. Gardens for special purposes. Trees: selection, propagation, planting schemes, canopy management, shrub sand herbaceous perennials: selection, propagation, planting schemes, architecture. Bonsai: principles and management, Lawn: establishment and maintenance. CAD application	Professional Ethics	-----	Environment	-----
39	<u>Third Year</u> SEMESTER – VI Subject Code: VOC612 Skill Specific- XVI- Elective- III (Agrochemicals)	VI	Introduction to agrochemicals, their type and role in agriculture, Effect of agrochemicals on environment, soil, human and animal health. Merits and demerit soft heires's agriculture, management of agrochemicals for sustainable agriculture. Fertilizers and their classification; N-fertilizers: classification, manufacturing process and properties, their fate and reaction Phosphatic fertilizers, manufacturing process and properties Potassic fertilizers and complex fertilizers, their fate and reaction in soils. Secondary nutrients and fertilizers, their type, composition, reaction in	Professional ethics	-----	Environment	-----



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Sr. No.	Class, Paper with Paper No	Semester	Curriculum	Cross Cutting Issues Present in the Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
			soils and effect on crop growth. Micronutrient fertilizers, their type, composition, reaction in soils and effect on crop growth. Liquid fertilizers Handling and storage of fertilizers Biofertilizers and their role in crop production Fertilizer control order and insecticide Act Introduction and classification of insecticides: Different types of Classification of insecticides. (Based on toxicity, mode of entry, mode of action, chemical nature) Inorganic and organic insecticides Organochlorine, Organophosphates, Carbamates, Synthetic pyrethroids Neonicotinoids, Biorationals. Insecticide Act and rules. Insecticides banned, withdrawn and restricted use, IGRs and Biopesticides. Reduced risk insecticides Botanicals, plant and animal systemic insecticides their characteristics and uses. Mode of action of insecticides (Pyrethroids, organophosphates, Carbamates and Chitin synthesis inhibitor) Herbicide- Classification, Formulations, Methods of application. Mode of action of herbicide- Translocation and absorption Persistence and fate of herbicides, Residual effect of herbicides Introduction to selectivity of herbicide Compatibility of herbicides with other Agrochemicals Introduction to adjuvants and their use in herbicides				



**List of the certificate courses  
which inculcate cross-cutting  
issues**



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**Certificate Courses Run by Institute During Last Five Years Which Integrates  
 Cross Cutting Issues**

Sr. No.	Department	Coordinator Name	Certificate Course Name	Cross Cutting Issues Present in Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
1.	Department of Computer Science	Dr. V. P. Pagore		Supervised Learning, Knowledge of organization and manipulation	Sentiment Analyzer	-----	-----
2.	Botany	Dr. S. A. Kamble	Nursery Management (2017-18 to 2021-22)	Basics of nursery management, Nursery management, commercial importance.	-----	Preliminary considerations for production of quality planting material, Plant Protection	-----
3.	Chemistry	Dr. S. B. Munde	Research Methodology in Chemistry (2019-20 & 2021-22)	Foundation of Research, Advanced techniques of analysis and ethics of research, Basic knowledge of computer systems	-----	Concepts of chemical safety	-----



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Sr. No.	Department	Coordinator Name	Certificate Course Name	Cross Cutting Issues Present in Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
4.	Chemistry	Dr. S. B. Munde	Chemical Lab Safety (2017-18 & 2018-19)	General lab safety rules	-----	Safe Handling of Hazardous Chemicals, Storing, labeling, handling and personal hygiene	-----
5.	Zoology	Dr. A. B. Mantale	Aquarium Maintenance	-----	-----	Study of Ornamental Fishes, Water Quality	-----
6.	Zoology	Dr. A. B. Mantale	Vermiculture And Vermicomposting	-----	-----	Introduction to vermiculture, Agri Horticulture practices, Identification of species of earthworm, Role in Biotransformation	-----
7.	Physics	Dr. A. P. Keche	Mobile Repairing	Basic and Advanced Troubleshooting, Mobile Phone Servicing	-----	-----	-----
8.	Physics	Dr. A. P. Keche	Electronic Equipment Maintenance	Professional Communication	-----	-----	-----



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Sr. No.	Department	Coordinator Name	Certificate Course Name	Cross Cutting Issues Present in Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
9.	Sociology	Dr. H. D. Misal	Process Of Field Survey in Social Science Research	Techniques of Sociological Investigations, Data Analysis and Data Interpretation Types of Research	Process of Field Survey in Social Science Research, Utility of Social Science Research	-----	-----
10.	Sociology	Dr. H. D. Misal	Personality Development	The Determining Factor of Personality	Personality Analysis, Ideal Personality, Personality & Individual	-----	-----
11.	History	Dr. V. S. Bagul	Research Methodology in History 2021-22	Understand the importance of research in history and various methods, Examine the authenticity & credibility of historical resources, Cite the reference and bibliographical details in scientific manner	-----	-----	-----
12.	History	Dr. V. S. Bagul	History Of Marathwada Mukti Sangram (2019-20)	Understand the various stages of history of Marathwada Mukti Sangram,	Analyze the contemporary problems of Princely states in India and government policy to merge them in India	-----	-----



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Sr. No.	Department	Coordinator Name	Certificate Course Name	Cross Cutting Issues Present in Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
13.	Economics	Dr. V. S. Phulari	International Economics	Importance of Trade, Balance of Payment, Gains from Trade Free trade & policy	-----	-----	-----
14.	Economics	Dr. V. S. Phulari	Micro Economics	Elasticity of Demand, Theory of Demand and Supply, Analysis of Market Equilibrium, Analysis of Costs and Revenue	-----	-----	-----
15.	Marathi	Dr. D. M. Pandilwad	Research Methodology (2021-22)	Types of Research, Introduction to research, Methods in research in Marathi	-----	-----	-----
16.	Marathi	Dr. S. W. Wawge	Applied Marathi (2019-20)	Interview Techniques, Translation Qualities, Grammar	-----	-----	-----
17.	Hindi	Dr. M. S. Kharat	Research Methodology (2021-22)	Types of research, Scope, outcome, शोध का अभिप्राय, प्रमुख शोध पद्धतियाँ, शोध प्रबंध की रूपरेखा	-----	-----	-----

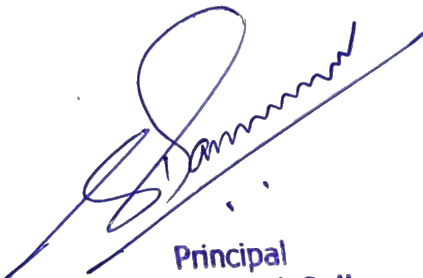


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Sr. No.	Department	Coordinator Name	Certificate Course Name	Cross Cutting Issues Present in Curriculum			
				Professional Ethics	Human Values	Environment, Sustainability	Gender
18.	English	Dr. A. S. Deshmukh	Spoken English- Leadership Skills- Emotional Intelligence Stress and Conflict Management, Negotiation, Life skills	Professional Ethics	Human Values	-----	-----
19.	English	Dr. A. S. Deshmukh	Communicative English- Communication Skills, Language Skill, Leadership Skills, Stress & Conflict Management -Emotional Intelligence, Life Skills, Flexibility	Professional Ethics	Human Values	-----	-----
20.	Commerce	Dr. A. D. Padale	Computerized accounting- Computerized accounting, Management & Administration of Data, Taxation & Tx reforms	Professional Ethics	-----	-----	-----
21.	Commerce	Dr. S. B. Gaikwad	Basics of Stock Market - Fundamental & Technical analysis, Investment basics.	Professional Ethics	-----	-----	-----
22.	Gandhiyan Thought Study Centre	Dr. B. S. Manal	Gandhian Concept of Sarvodaya - Decentralized System of economy- The spiritual basis of Sarvodaya, holistic society, world peace, Gandhian thought, Socialism & Sarvodaya	Professional Ethics	-----	-----	-----



  
**IQAC Co-Ordinator**  
 Shri Mukatananad College  
 Gangapur, Dist. Aurangabad (MH).

  
**Principal**  
 Shri Muktanand College,  
 Gangapur, Dist. Aurangabad