

Shivaji University, Kolhapur

Name of Department: Yashwantrao Chavan School of Rural Development

Name of Programme: M. Tech (Rural Technology)

Vision: The YCSR D is proposed for upholding and fostering the values of creativity, integrity and excellence for rural development and rural management.

Mission: YCSR D would be one of the premier institutions involved in empowering the youth for rural development and rural management in the country. YCSR D's mission is to promote sustainable and the equitable socio-economic development of rural people through professional management.

Program Outcomes:

1. Acquire knowledge of basic sciences and technical concepts of various fields in engineering.
2. Acquire an ability to identify, formulate and solve technical problems.
3. Acquire an ability to design and conduct experiments and analyze and interpret data related to rural technology.
4. Acquire skills to use engineering tools, software and equipment to analyze problems.
5. Acquire knowledge of professional and ethical responsibilities and develop an understanding of impact of appropriate engineering solutions on the society.
6. Acquire awareness of contemporary issues related to rural area.

Program Specific Outcomes:

1. Apply technical knowledge and skills as Technocrat to provide the solutions in rural area and rural industries and government organizations.

2. Utilize effective communication, team, and project management skills to work productively within their professions and communities.
3. Formulate and implement the appropriate technologies according to the problems identified in rural area.
4. Conduct themselves in a responsible, professional and ethical manner.

Course Outcomes:

M. Tech Part-I Semester-I

67253	Energy system engineering	<ol style="list-style-type: none"> 1. Create awareness among students about Non- Conventional sources of energy technologies. 2. Enable students to understand various renewable energy technologies and systems. 3. To impart the knowledge of Storage technologies form the autonomous renewable energy sources. 4. Equip the students with knowledge and understanding of various possible mechanisms about renewable energy projects.
67254	Appropriate Technology-I	<ol style="list-style-type: none"> 1. Understand the ethical problems of society. 2. Understand the concepts of technology society relationships. 3. Find out the illustration for several technologies through case studies. 4. Study the concept of technology and development.
67258	Economic analysis for rural development	<ol style="list-style-type: none"> 1. Understand the economic problems and functions of economic systems. 2. Study tools and techniques of economic analysis. 3. Understand the concept of linear programming and its applicability in economic analysis.

		<ol style="list-style-type: none"> 4. Acquire the knowledge of employment and income. 5. Understand economic theory of co-operative firms.
67259	Numerical Methods and Optimization	<ol style="list-style-type: none"> 1. Solve linear algebraic equations 2. Study curve fitting and statistics. 3. Solve partial differential equations by various methods. 4. Solve ordinary differential equations by various methods. 5. Understand the derivation of unequally spaced data.
67260	Agri Business Management	<ol style="list-style-type: none"> 1. Understand the marketing strategy in developing economy. 2. Study marketing research and its applications. 3. Understand the management of processing of major farm products. 4. Understand the pricing policies and practices. 5. Acquire knowledge of branding and packaging of agro products.
67261	Design of Experiment and Research Methodology	<ol style="list-style-type: none"> 1. Organize and conduct research (advanced project) in a more appropriate manner. 2. Identify appropriate research topics. 3. Select and define appropriate research problem and parameters. 4. Understand some basic concepts of research and its methodologies. 5. Prepare a project proposal (to undertake a project).
67262	Civil engineering and remote sensing and GIS	<ol style="list-style-type: none"> 1. Acquire knowledge of water resources structure and transportation engineering. 2. Study the concepts of remote sensing. 3. Apply the knowledge of mapping and monitoring of natural disasters.

		<ol style="list-style-type: none"> 4. Understand the fundamentals of GIS and its applications. 5. Study the digital image processing.
67263	E-governance	<ol style="list-style-type: none"> 1. Understand the role of ICT in governance. 2. Study the web portals and mobile Implementation. 3. Acquire the knowledge of e-government issues and challenges. 4. Study the applications of e-governance in rural development. 5. Study the Business Process Reengineering.
67264	Food Technology	<ol style="list-style-type: none"> 1. Study the unit operations in food engineering. 2. Study the concepts of heat transfer. 3. Understand the various thermal processes. 4. Study the refrigeration principles and food freezing. 5. Understand the food packaging methods.
67265	Thermodynamics , Fluid and Electrical Engineering applied to rural development	<ol style="list-style-type: none"> 1. Enable students to understand various technologies and systems in rural development. 2. Calculate efficiency of steam power plant. 3. Understand functions of various power Plants. 4. Understand the concepts of pump compressor and turbine.
M. Tech Part I Semester II		
67266	Environmental Management	<ol style="list-style-type: none"> 1. Understand the various treatment systems for water and wastewater. 2. Study the sanitation related problems and its control. 3. Understand air pollution and its control technologies. 4. Understand the soil pollution and remediation technologies 5. Study the solid and hazardous waste

		treatments.
67267	Appropriate Technology -II	<ol style="list-style-type: none"> 1. Understand the alternative frameworks for choice of technology. 2. Study the Analytical Hierarchy Process for ranking alternatives. 3. Study the Mahatma Gandhi and Shumaker approach for village development. 4. Find out the illustration for several technologies through case studies. 5. Understand influence of development perspective on rankings.
67268	Entrepreneurship for Rural Development Industrialization	<ol style="list-style-type: none"> 1. To develop understanding about Entrepreneurship in Rural Context. 2. To develop entrepreneurial skills in the rural youth. 3. To explore and identify rural potential for a business idea. 4. To developing skills to convert the idea into a commercial viable business concept. 5. To measure the feasibility of the identified concept by the students.
67269	Integrated Water Management	<ol style="list-style-type: none"> 1. Acquire the knowledge of hydrological study. 2. Study the soil and water conservation concepts. 3. Understand the rainwater harvesting systems. 4. Study the irrigation concepts. 5. Take decisions of watershed management systems at society level.
67270	Agro and food process technologies	<ol style="list-style-type: none"> 1. Acquire the knowledge of various thermal and non- thermal processes. 2. Study the various aspects of freezing. 3. Understand the concepts of extrusion and its applications. 4. Study the process of distillation and

		<p>solvent extraction.</p> <p>5. Study the latest developments in separation and novel separation techniques.</p>
67271	Farm Machinery	<ol style="list-style-type: none"> 1. Understand the various manufacturing techniques of farm machinery. 2. Study the design considerations required for farm machinery components. 3. Study the detailed design of farm machinery equipments. 4. Study the safety devices for farm Implements.
M. Tech Part I (Semester I and II)		
67255	Minor Project	<ol style="list-style-type: none"> 1. Acquire practical knowledge within the chosen area of technology for project development. 2. Contribute as an individual or in a team in rural development of technical projects. 3. Understand real problems of rural area. 4. Develop an approach for finding the solutions of various issues in rural area.
67256	Field Work	<ol style="list-style-type: none"> 1. To identify the problems and needs of the rural people by the way of direct surveys and interaction with NGOs working for rural people. 2. To educate the rural people on rural technologies/skills development by way of conducting workshops, short term courses and formal/non-formal interactions from time-to-time. 3. To develop the spirit of entrepreneurship within the rural people so that some of them can use their know-how and resources for setting-up small scale self-sustaining industries. 4. To spread awareness towards making the planet greener and devising techniques to

		<p>replace the non-green technology by greener and environmental friendly techniques.</p> <ol style="list-style-type: none"> 5. To constitute a working group of innovators comprising academicians, scientists, personnel from NGOs, Governmental agencies and technical institutes, traditional craftsmen and artisans, farmers and social entrepreneurs. 6. To involve and inspire the student fraternity to work for rural welfare. 7. To develop rural technologies to be used for various rural tasks, which can raise the life standard of the rural people. 8. To study the existing traditional technology available with the villagers and refine it further for use at higher scale.
67257	Seminar	<ol style="list-style-type: none"> 1. To improve oral and written communication skills. 2. To use multiple thinking strategies to examine real-world issues, explore creative avenues of expression, solve problems, and make consequential decisions. 3. To help in exploring new ideas. 4. To develop the ability to seek clarification and defend the ideas of others effectively.