



“ज्ञान, विज्ञान आणि सुसंस्कार यांसाठी शिक्षणप्रसार” – शिक्षणमहर्षी डॉ. बापूजी साळुंखे

Shri Swami Vivekanand Shikshan Sanstha, Kolhapur's

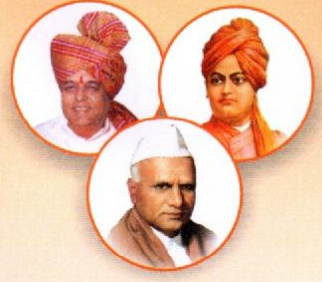
**PADMABHUSHAN DR. VASANTRAODADA PATIL MAHAVIDYALAYA**

TASGAON, Dist. Sangli, Pin- 416 312 ☎ - STD : 02346-250665, 250575 FAX : 250575

● **Affiliated to Shivaji University, Kolhapur** ●

E-mail : san.pdvpmtasgaon@gmail.com Website : www.pdvpmtasgaon.edu.in

▶ Established Year : June 1962 ▶ P. B. No. : 14 ▶ Jr. College No. : J22-10-001 ▶ Sr. College Code No. :  $\frac{SI/AC/4}{X}$  Jr.: C-8



NAAC Reaccredited 'B<sup>++</sup>' (2.76)

ISO Certified : 9001:2015

**Shikshanmaharshi  
Dr. Bapuji Salunkhe**  
B.A., B.T., D.Litt.  
FOUNDER

**Hon. Chandrakant (Dada) Patil**  
PRESIDENT  
B.Com.  
Ex- Minister of Revenue, Public Works  
Govt. of Maharashtra

**Prin. Abhaykumar Salunkhe**  
M.A.  
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**Prin. Mrs. Shubhangi Gawade**  
M.Sc. B.Ed.  
SECRETARY

**Dr. Milind S. Hujare**  
M.Sc., Ph.D.  
PRINCIPAL

Ref.No. : PDVPMT /

Date :

## Criterion I

### Curricular Aspects

#### 1.2.2

### Certificate Courses offered during the last five years

1. Certificate Courses of 2020-21 <http://pdvpmtasgaon.edu.in/iqac/Criterion-122-202021>
2. Certificate Courses of 2019-20 <http://pdvpmtasgaon.edu.in/iqac/Criterion-122-201920>
3. Certificate Courses of 2018-19 <http://pdvpmtasgaon.edu.in/iqac/Criterion-122-201819>
4. Certificate Courses of 2017-18 <http://pdvpmtasgaon.edu.in/iqac/Criterion-122-201718>
5. Certificate Courses of 2016-17 <http://pdvpmtasgaon.edu.in/iqac/Criterion-122-201617>



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### 1.2.2. Learning Outcomes of the Certificate Courses offered during Five Years.

Sr. No.	Nme of the Department	Sr. No.	Name of the course	Year of Offering the course	Learning Outcomes of the Certificate Courses
1	Marathi	1	Certificate Course in Communication and Mass Communication	2016	<ol style="list-style-type: none"> <li>1. Developed effective communication skills.</li> <li>2. Developed language knowledge</li> <li>3. Personality development</li> <li>4. Developed entrepreneurship skills</li> <li>5. Developed experience and behavior of students.</li> </ol>
2	Hindi	2	Certificate Course in Translation (Hindi)	2016	<ol style="list-style-type: none"> <li>1. Widening the vistas of knowledge in whichever area or discipline one wants to work</li> <li>2. Spreading the mainstream ideologies in Linguistic minorities and connecting these bordered and marginalized people with those who seem to dominate the center through language or command on language.</li> <li>3. Increase the leadership in languages around us, in India especially as we have rich heritage of written and spoken languages</li> <li>4. Increase of the worldwide readership and spreading the native and the local literature as well as disciplinary knowledge to the world outside the state /nation.</li> <li>5. Development of reviews, appreciations, criticism through translation in various languages</li> <li>6. Evaluation and analysis of research papers, courses and the educational as well as professional documentation</li> <li>7. Reaching out to the remote corners of the globe in the globalized world.</li> </ol>
3	English	3	Certificate	2016	<ol style="list-style-type: none"> <li>1. Students get information about contribution of</li> </ol>

			Course in Translation (English)		<p>great writers in regional languages.</p> <ol style="list-style-type: none"> <li>2. Students get growth and development of great classic literature in other languages.</li> <li>3. Understand the contribution of major Indian writers and features of their social awareness and needs of today.</li> <li>4. Students acquire deep and rich thoughts and themes from great regional writers and arts.</li> <li>5. Overall development of students by the incidents, situations and actions of the literature of great writers of the world</li> </ol>
		4	Certificate Course in Functional English	2019	<ol style="list-style-type: none"> <li>1. To help undergraduate students of the functional English develop the skill of language learning namely – Listening, Speaking, Reading and Writing.</li> <li>2. To develop student’s proficiency in English through meaningful communicative activities.</li> <li>3. Acquaint student’s development and growth about functional English.</li> <li>4. Develop the basis of grammar and composition.</li> <li>5. Speak English fluently and confidently students get an intellectual and practical advantage in life.</li> </ol>
4	Economics	5	Certificate Course in Human Rights & Education	2016	<ol style="list-style-type: none"> <li>1. Identify and evaluate the historical, philosophical, political and cultural developments establishing human rights as a set of global norms, agreements, and procedures.</li> <li>2. Explore global human rights institutions, law, and processes, and assess the impact of their interaction with national and local cultural practices and norms.</li> <li>3. Critically examine the impact of diverse geographic, cultural and theoretical contexts on the social acceptance and practical application of human rights norms.</li> <li>4. Synthesize interdisciplinary approaches and contributions to topics such as gender, race, poverty, violence and post-colonialism within a human rights framework.</li> <li>5. Reflectively evaluate the effectiveness of human rights practice on local, national or international humanitarian efforts.</li> </ol>
		6	Certificate Course in Rural Development (Economics)	2018	<ol style="list-style-type: none"> <li>1. The course has been blended to create knowledge and skill development needed for effective utilization and management of human resources within the parameters of Rural Development.</li> </ol>

				<ol style="list-style-type: none"> <li>2. It aims at providing a holistic perspective of schemes/programmes of central and state govts. in building and strengthening grass root level organizations through participatory development.</li> <li>3. It is innovative, skill and employment oriented to attract bright students to the discipline of rural development .</li> <li>4. It offers an opportunity to interact with administrators, community leaders, NGOs and professionals helping the students to understand the broad framework of development in rural India.</li> </ol>
		7	<p>Certificate Course in New Concepts in Advanced Banking</p> <p>2019</p>	<ol style="list-style-type: none"> <li>1. Understanding banking terms and concept.</li> <li>2. Learn practical aspect of banking like NEFT, RTGS, Demand Draft etc</li> <li>3. Learn and understand technological features of modern day banking.</li> <li>4. Improve and develop employability skills of the banking sector</li> </ol>
5	History	8	<p>Certificate Course in Modi Script</p> <p>2016</p>	<ol style="list-style-type: none"> <li>1. To study the Chronological methods of Maratha, Bahamani, Vijayanagar and Mughal Period</li> <li>2. Modi documents from south Maharashtra has given interesting information on Modi.</li> <li>3. The course, ill be an introduction to medieval writing system, their application and later development of script.</li> </ol>
		9	<p>Certificate Course in Museology</p> <p>2016</p>	<ol style="list-style-type: none"> <li>1. This course is of introductory nature. The students will understand the concept of the museum and learn the basic principles of museology. They will be exposed to the basic principles of museum management and administration.</li> <li>2. This course introduces the students to the technical knowledge needed in the field of museology.</li> <li>3. This course gives the students an opportunity to apply their knowledge of museology in a practical situation. The students are expected to undertake projects and case studies related to the functioning of the museum.</li> <li>4. In this course, the students will gain comprehensive knowledge of the process of caring and conserving museum objects they will be introduced to the technical knowledge needed to preserve and conserve museum objects.</li> </ol>

		10	Certificate Course in Archaeology	2017	<ol style="list-style-type: none"> <li>1. Define archeology and its relation with other disciplines.</li> <li>2. Compare different archeological sites in india.</li> <li>3. Analyse different dating methods in archaeology</li> <li>4. Define archeology and its relation with other disciplines</li> </ol>
		11	Certificate Course in Tourism	2018	<ol style="list-style-type: none"> <li>1. Critique tourism practices for their implications locally and globally.</li> <li>2. Interpret and evaluate tourism as a phenomenon and as a business system.</li> <li>3. Apply relevant technology for the production and management of tourism experiences.</li> <li>4. Demonstrate commitment to ethical practices of tourism.</li> <li>5. Actively engage in the world as global citizens.</li> </ol>
		12	Certificate Course in Tourism Marketing	2019	<ol style="list-style-type: none"> <li>1. Contextualize tourism within broader cultural, environmental, political and economic dimensions of society.</li> <li>2. Explain the diverse nature of tourism, including culture and place, global/local perspectives, and experience design and provision.</li> <li>3. Identify and assess relationships and networks relative to building tourism capacity.</li> <li>4. Create, apply, and evaluate marketing strategies for tourism destinations and organizations.</li> <li>5. Develop and evaluate tourism policy and planning initiatives.</li> </ol>
		13	Certificate Course in Bramhi Script	2020	<ol style="list-style-type: none"> <li>1. The course will be an introduction to ancient writing system, their application and later development of script.</li> <li>2. The course also intends to introduce students to read and decipher basic words written in Brahmi script, while also attempting at reading Brahmi numerals.</li> </ol>
		14	Certificate Course in Rural Journalism	2020	<ol style="list-style-type: none"> <li>1. Demonstrate an elementary knowledge of the role and importance of communication at media platforms.</li> <li>2. Comprehend the history and development of communication at various levels of the society and its role with respect to modern day technology.</li> <li>3. Explain the growth and development of Advertising as a field.</li> <li>4. Cover and write balanced reports through objectivity, accuracy, and brevity and understand the duties and qualities of a responsible reporter.</li> </ol>
6	Geography	15	Certificate Course in Tours and Travel	2016	<ol style="list-style-type: none"> <li>1. Understand the concept of tourism, basic about tourism industry.</li> <li>2. Access and appropriate</li> <li>3. To disseminate accurate and detailed product Knowledge and destination information about</li> </ol>

				<p>different types of tourist.</p> <ol style="list-style-type: none"> <li>4. Develop ongoing professional development strategies and plans to enhance Industry knowledge and leadership skills for tourism industry sectors.</li> <li>5. Evaluate about the different stakeholders and relevant agencies in the tourism industry and how these stakeholder plays their functions.</li> </ol>	
		16	Certificate Course in Poultry Farming Management and Marketing	2018	<ol style="list-style-type: none"> <li>1. This course will enlighten the farmers/ students about the operation of livestock and poultry farming.</li> <li>2. Learning of poultry farming will generate a source of employment opportunities in rural areas and employment to the farmers.</li> <li>3. Students will gain knowledge about livestock, Poultry management</li> <li>4. To get knowledge on caring of livestock, Poultry.</li> </ol>
		17	Remote Sensing (RS), Geographical Information System (GIS), Global Navigation Satellite system (GNSS)	2018	<ol style="list-style-type: none"> <li>1. Explain and communicate the concept of various kinds of maps and geospatial data.</li> <li>2. Develop, edit and update geospatial data.</li> <li>3. Create digital maps; apply projections and other characteristics of mapping.</li> <li>4. Apply basic procedures of digital image processing for RS image enhancement analysis.</li> <li>5. At the end of this course participant must be able to understand how to use GNSS receivers with different measurement and positioning techniques as per application requirement.</li> </ol>
		18	Certificate Course in Population Studies	2020	<ol style="list-style-type: none"> <li>1. Acquire the knowledge about basic components of population change.</li> <li>2. Understand the growth of population in the globe.</li> <li>3. Identify the distribution of population in various regions.</li> <li>4. Demonstrate the population characteristics.</li> <li>5. Comprehend the linkages of age and sex structure.</li> <li>6. Understand the basic concepts Fertility and importance of fertility studies.</li> </ol>
7	Sociology	19	Certificate Course in Human Rights	2016	<ol style="list-style-type: none"> <li>1. Creating human rights awareness among student.</li> <li>2. Gained Knowledge various human rights clauses.</li> <li>3. To encourage research activities.</li> <li>4. Study of various sections of human rights.</li> </ol>
		20	Certificate Course in Fundamentals of Anthropology	2018	<ol style="list-style-type: none"> <li>1. Tribal Community was introduced among the students.</li> <li>2. The students became aware of various problems of the tribal community.</li> </ol>

		21	Certificate Course in Rural Development (Sociology)	2020	<ol style="list-style-type: none"> <li>1. Creating rural development awareness among student.</li> <li>2. Students should develop an interest of study of rural community.</li> <li>3. To try implement various schemes in rural areas.</li> <li>4. To strive for the provision of food, clothing, shelter, education, health and recreation to the people in rural areas.</li> </ol>
8	Political Sc	22	Certificate course in Panchayat Raj Government Scheme	2016	<ol style="list-style-type: none"> <li>1. Creating Panchayat Raj awareness among Student.</li> <li>2. Students should develop an interest of Local Government Leadership.</li> <li>3. To try important various schemes in Panchayat Raj areas.</li> <li>4. Students from rural areas were informed about the working of Gram Panchayat</li> </ol>
9	Commerce	23	Certificate Course in Income tax	2016-2019	<ol style="list-style-type: none"> <li>1. Acquire the complete knowledge basic concepts of Income Tax at 1961.</li> <li>2. Complete centralized income tax returns and be able to calculate the correct amount of income tax.</li> <li>3. Calculate residential status of a person and income from salary of salaried person.</li> <li>4. To access the online PAN application and e-filing returns process.</li> <li>5. Apply basic tax concepts to simple fact situations and communicate potential Income Tax ramifications in script and vocally.</li> </ol>
		24	Certificate Course in Tally and Excel	2020	<ol style="list-style-type: none"> <li>1. Work with an Excel worksheet by entering and selecting the data in it.</li> <li>2. Modify a worksheet, perform calculations and print workbook contents.</li> <li>3. Understand the basic features associated with Tally.</li> <li>4. Identify the key components of Tally.</li> <li>5. Enter the accounting transactions in computerized format and find the financial result of a concern.</li> <li>6. Interpret financial statements as well as evaluation of stock at the end.</li> <li>7. Gain working knowledge of Excel, Access and their application in business.</li> <li>8. Work with the required skills and</li> </ol>

				independently operate the various options of Excel for office accounting department.
		25	Certificate Course in Certified tax Expert	2020
				<ol style="list-style-type: none"> <li>1. Acquire the complete knowledge basic concepts of Income Tax at 1961.</li> <li>2. Acquire the complete knowledge basic concepts of Goods and Service Tax (GST) at 2017.</li> <li>3. Complete centralized income tax returns and be able to calculate the correct amount of income tax.</li> <li>4. Calculate residential status of a person and income from salary of salaried person.</li> <li>5. To access the online PAN application and e-filing returns process.</li> <li>6. Apply basic GST concepts in tally package for e-filing of GST returns.</li> </ol>
10	Physics	26	Certificate Course in Electrical maintenance and Safety Awareness	2016
		27	Certificate Course in Repairing and Maintenance of Home Appliances	2018
		28	Certificate Course in Operation and	2019
				<ol style="list-style-type: none"> <li>1. Students acquire knowledge about the function and use of electrical boards, accessories.</li> <li>2. Maintain the voltage as well as current at any part of an electrical equipment or system at a known value.</li> <li>3. Home appliances or equipment's prevented from over current or excessive voltage.</li> <li>4. Students acquire knowledge about different types of electrical wires and accessories as well as earthing or grounding. Also, create awareness about electrical earthing.</li> <li>1. Identify parts/components, front panel controls, install, service, troubleshoot, and repair domestic electronics appliances viz. iron, mixer-grinder, and electrical fans with due care and safety.</li> <li>2. Students acquire knowledge about the function and use of electrical equipment and accessories. Also, create awareness about electrical home appliances.</li> <li>3. Recognize and comply with safe working practices, environmental regulations, and housekeeping.</li> <li>4. Repair maintenance of the basic electrical home appliances.</li> <li>1. The students who completed this course are competent in cold storage, managing cold storage, and maintaining cold storage system.</li> </ol>



			Management of Cold Storage Physics		<ol style="list-style-type: none"> <li>Operate cold storage system.</li> <li>Students acquire knowledge about the functioning and use of electrical - electronic parts of the cooling systems and accessories. Also, create awareness about refrigeration systems.</li> <li>Repair and maintenance of cold storage system</li> </ol>
		29	Maintenance and Repairs of Domestic Appliances	2020	<ol style="list-style-type: none"> <li>The students shall be able to identify the fault, repair and do maintenance of electrical products.</li> <li>Students acquire knowledge about the function and use of electrical equipment, and accessories. Also, create awareness about electrical domestic appliances.</li> <li>Maintain the voltage as well as current at any part of electrical equipment or system at a known value</li> <li>Home appliances or equipment's prevented from over current or excessive voltage.</li> <li>Able to do domestic wiring and maintenance</li> </ol>
11	Chemistry	30	Certificate Course in Analytical Techniques	2016	<ol style="list-style-type: none"> <li>To be able to use selected analytical techniques.</li> <li>Familiarity with working principals, tools and techniques of analytical techniques.</li> <li>To understand the strengths, limitations and creative use of techniques for problem-solving.</li> </ol>
		31	MOOC Course on Electrochemistry	2020	<ol style="list-style-type: none"> <li>The primary objectives of this course are to develop the skills to understand the theory and practice of bio analytical techniques.</li> <li>To provide scientific understanding of analytical techniques and detail interpretation of results.</li> </ol>
		32	Certificate Course on Communication Skill	2020	<ul style="list-style-type: none"> <li>Students will be able to understand and apply knowledge of human communication and language processes as they occur across various contexts.</li> <li>Such as interpersonal, intrapersonal, small group, organizational, media, gender, family, intercultural communication, technologically mediated communication, etc</li> </ul>
12	Botany	33	Certificate Course in Gardening	2019	<ol style="list-style-type: none"> <li>Understand the process of sowing seeds / propagation techniques to grow a plant.</li> <li>List the various basic materials &amp; resources required for the development of a plant.</li> <li>Distinguish among the different methods of growing plants.</li> <li>Analyse the process of Vegetative propagation.</li> </ol>

				5. Appreciate the diversity of plants and selection of gardening. • To be able to cultivate different vegetables as microgreens& select oxygen donors of indoor gardening
		34	Fruit Processing and Preservation	2017 1. knowledge about types of fruits and vegetable, their composition and nutritive value; 2. Handling, storage, and transportation, and processing of different kind of products like juices, jams, jelly, marmalades, pickles, chutney etc. 3. On completion of this programme student will be able to explain the advanced processing of Fruits and Vegetable. 4. The students can apply the various concepts of food chemistry in preservation and processing; also analyze the effect of various processing techniques on the quality of products, discuss and plan the by- product utilization of fruits and Vegetable industry. 5. The programme has been designed for professionals, students aspiring to work in the field of beverages industry, all involved in implementing and maintaining product quality systems, quality control and quality assurance personnel, new product development personnel.
13	Zoology	35	Certificate Course in Soil and Water and Analysis 2016-17	2016 1. .To develop basic understanding regarding soil and water testing in the students. 2. 2.Importance of soil and water analysys. 3. 3 To introduce them with macro and micro nutrients for soil. 4. 4 To enhance their skills about soil and water analysis.
		36	Certificate Course in Vermicomposting and biotechnology	2018 1. Students will be able to compost in a limited space and describe the decomposing process. 2. The interested students will get the knowledge of composting, 3. Students will get the employment, 4. They can generate employments, 5. They will also turn towards organic farming, 6. Will help to maintain the environment pollution free and 7. Will get the knowledge of biodiversity of local earthworms. 8. Students can construct their own compost farm & thereby can get monthly income of Rs.7000-

				<p>8000.</p> <ol style="list-style-type: none"> <li>9. Students/ farmers by using vermicompost in their field can increase the crop yield.</li> <li>10. Students residing in cities can produce vermicompost in small scale for garden/household plants.</li> <li>11. They can get the jobs in educational institutes as vermicompost/vermiculture technician.</li> <li>12. The candidate can generate income by supplying verms, vermiwash, &amp;vermicompost.</li> <li>13. By developing &amp; propagating vermicompost technology he/she will directly or indirectly</li> <li>14. help to prevent environmental pollution, by using vermicompost in the field &amp; thereby increasing crop yield.</li> <li>15. It will lead towards organic farming &amp; healthy food</li> </ol>
		37	Certificate course on Sericulture	<p>2020</p> <ol style="list-style-type: none"> <li>1. Develop interest in the field of Agriculture science among students.</li> <li>2. Cultivate public awareness and appreciation for Sericulture as a hobby and science.</li> <li>3. Motivate students for scientific study in the field of Agro-based Industry by performing simple projects and field visits.</li> <li>4. To developed the skill, how to develop and earn regular incomes through sericulture in the Vidarbha area dependent on Monsoon.</li> <li>5. Many Government Subsidies' and facilities are provided for the motivation of poor farmers.</li> <li>6. Non Dependency on monsoon and can be developed with few labours and very little finance.</li> </ol>
14	Mathamatics	38	Certificate Course in Optimization Problems	<p>2016</p> <ol style="list-style-type: none"> <li>1. Write and interpret mathematical notation and mathematical definitions,</li> <li>2. Formulate and interpret statements presented in Boolean logic. Reformulate statements from common language to formal logic. Apply truth tables and the rules of propositional and predicate calculus,</li> <li>3. Formulate short proofs using the following methods: direct proof, indirect proof, proof by contradiction, and case analysis,</li> <li>4. Demonstrate a working knowledge of set notation and elementary set theory, recognize the connection between set operations and logic, prove elementary results involving sets, and explain Russell's paradox,</li> <li>5. To optimize problems .</li> <li>6. Solve discrete mathematics problems that involve: computing permutations and combinations of a set, fundamental enumeration principles, and graph theory, and</li> <li>7. Gain an historical perspective of the</li> </ol>

				development of modern discrete mathematics.	
		39	Certificate Course in Operations Research	2017	<p>Upon successful completion of this course entitled “Operation Research “ students will be able to</p> <ol style="list-style-type: none"> <li>1. analyze, solve and computing real-world applications of finite and operation research,</li> <li>2. set up and solve linear systems/linear inequalities graphically/geometrically and algebraically (using matrices),</li> <li>3. formulate problems in the language of sets and perform set operations, and will be able apply the Fundamental Principle of Counting, Multiplication Principle</li> <li>4. To Maximize, minimize and allocate problems</li> </ol>
		40	Certificate Course in Conceptual Mathematics for Competitive Examination	2018	<ol style="list-style-type: none"> <li>1. To precise and make compact frame of problem</li> <li>2. To develop skills to solve problems within time limit.</li> <li>3. Understand the foundations of mathematics</li> <li>4. Be able to perform basic computations in higher mathematics</li> <li>5. Be able to read and understand middle-level proofs</li> <li>6. To learn tricks for banking, MPSC, UPSC exams.</li> </ol>
		41	Certificate Course in Laplace Transform & Fourier Transform	2019	<ol style="list-style-type: none"> <li>1. Be able to write and understand basic proofs</li> <li>2. Develop and maintain problem-solving skills</li> <li>3. Use mathematical ideas to model real-world problems</li> <li>4. To learn different operators useful in engineering sectors</li> </ol>
		42	Certificate Course in Quantitative Aptitude for Competitive Exams	2020	<ol style="list-style-type: none"> <li>1. Be able to communicate mathematical ideas with others</li> <li>2. Have experience using technology to address mathematical ideas</li> <li>3. To understand problem more quickly which helpful for railway, banking and other competitive examinations.</li> </ol>
15	Statistics	43	Certificate Course in Data Analysis Using MS-Excel	2016	<ol style="list-style-type: none"> <li>1. Students are able to draw diagram and graphs by using MS-Excel.</li> <li>2. Students are creating data sheet.</li> <li>3. Students are analyzing data by using statistical formulae and functions.</li> </ol>

		44	Certificate Course on MINTAB	2019	<ol style="list-style-type: none"> <li>1. After completing the practical course students are getting knowledge about Minitab.</li> <li>2. Students are able to draw plots such as Histograms, Box plots, Bar charts, Pie charts, Scatter plots.</li> <li>3. Students are able to do statistical basics such as Measures of central tendency, Measures of dispersion, Matrix operations, correlations, regressions etc. using MINITAB.</li> </ol>
16	BCA	45	A certificate course in office Automation and MS-Word	2017	<ol style="list-style-type: none"> <li>1. Understand the components of office automation</li> <li>2. Perform operations using MS Word and PowerPoint</li> <li>3. Surf details through Internet</li> <li>4. Understand and discuss about the use of Office Package and internet in daily life</li> </ol>
		46	A Certificate Course In C programming using Linux	2018	<ol style="list-style-type: none"> <li>1. Student understand how to C use</li> <li>2. Develop confidence for self-education and ability for life-long learning needed for computer language.</li> <li>3. Demonstrate the use of Linux Operating system commands</li> </ol>
		47	A Certificate Course In Data Structure using C	2020	<ol style="list-style-type: none"> <li>1. Use and implement appropriate data structure for the required problems using a programming language such as C.</li> <li>2. Understand various searching &amp; sorting techniques</li> <li>3. Implementing various data structures viz. Stacks, Queues</li> <li>4. Implementation of Linked Lists and Trees.</li> </ol>
17	Comp. SC	48	A certificate course in Introduction to Artificial Intelligence	2017	<ol style="list-style-type: none"> <li>1. To understand how AI use</li> <li>2. To learn syntax and semantics of AI</li> <li>3. To learn how to use in-built functions and operators in AI</li> </ol>
		49	Certificate Course in MS Excel and R software	2018	<ol style="list-style-type: none"> <li>1. Learn the main R data structures – vector and data frame</li> <li>2. Compute basic summary statistics</li> <li>3. Produce data visualization's with the ggplot package</li> </ol>

			4. Solve fundamental error problems.
50	A certificate course in cyber security	2019	<ol style="list-style-type: none"> <li>1. Protect and defend computer systems and networks from cyber security attacks.</li> <li>2. Diagnose and investigate cyber security events or crimes related to computer systems</li> <li>3. Effectively</li> <li>4. Communicate in a professional setting to address information security issues</li> </ol>
51	Certificate Course in “Advanced Data Science”	2020	<ol style="list-style-type: none"> <li>1. Students will develop relevant programming abilities.</li> <li>2. Students will demonstrate proficiency with statistical analysis of data.</li> <li>3. Students will develop the ability to build and assess data-based models.</li> <li>4. Students will execute statistical analyses with professional statistical software.</li> <li>5. Students will demonstrate skill in data management</li> </ol>



**Prin. Dr. Milind S. Hujare**  
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