**Yadavindra Department of Engineering,   
Punjabi University Guru Kashi Campus,   
Damdama Sahib (Talwandi Sabo)**

**Master of Information Technology   
(M.Sc. IT - 2 years course)**

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| **Program Name:** Master of Science (Information Technology) Lateral Entry | **Program Code**: MITM2PUP |
| **Program Specific Outcomes:**   1. At the end of the program, the student should be able to Understand the concepts and applications in the field of Information Technology like Web designing and development, Mobile application development, and Network and communication technologies. 2. Analyst who can apply latest technologies who can analyze and synthesize computing systems through quantitative and qualitative techniques to solve problems in the areas of Information Technology. 3. Understand the technological developments in the usage of modern design and development tools to analyze and design for a variety of applications. 4. Apply the learning from the courses and develop applications for real world problems. 5. Be acquainted with the contemporary issues, latest trends in technological development and thereby innovate new ideas and solutions to existing problems. 6. Competent and complete software professional to meet the requirement of corporate world and Industry standard to provide solutions to industry, society and business. 7. Communicate in both oral and written forms, demonstrating the practice of professional ethics and the concerns for social welfare. 8. A thorough and practical expert in the use of state of the art techniques for developing Software based systems. | |

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| **Program Name:** Master of Science (Information Technology) Lateral Entry | **Program Code**: MITM2PUP |
| **Course Name:** Web Technology | **Course Code**: MITM2301T |
| **Course Outcomes:**   1. Able to connect a java program with a DBMS and perform insert, update and delete operations on DBMS table. 2. Able to develop a dynamic webpage using java script and HTML. 3. Able to write a server side java application called PHP to catch form data sent from client and store it on database. 4. Able to write a well formed / valid XML document. 5. Able to write a server-side java application called Servlet to catch form data sent from client, process it and store it on database. | |

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| **Program Name:** Master of Science (Information Technology) Lateral Entry | **Program Code**: MITM2PUP |
| **Course Name:** Java Programming | **Course Code**: MITM2302T |
| **Course Outcomes:**   1. Identify classes, objects, members of a class and the relationships among them needed for a finding the solution to specific problem 2. Identify, Design & develop complex Graphical user interfaces using principal Java Swing classes. 3. Able to use of different exception handling mechanisms and concept of multithreading for robust faster and efficient application development. 4. Implement Object Oriented programming concept using basic syntaxes of control Structures, strings and function for developing skills of logic building activity. 5. Identify and describe common abstract user interface components to design GUI in Java using Applet & AWT along with response to events. 6. Able to achieve reusability using inheritance, interfaces and packages and describes faster application development can be achieved. | |

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| **Program Name:** Master of Science (Information Technology) Lateral Entry | **Program Code**: MITM2PUP |
| **Course Name:** Software Engineering | **Course Code**: MITM2303T |
| **Course Outcomes:**   1. Knows the role of project management including planning, scheduling, risk management, etc. 2. Knowledge of software requirements and the SRS document. 3. Understanding of approaches to verification and validation including static analysis, and reviews. 4. Knowledge of basic s/w engineering methods and practices, and their appropriate application; 5. Understanding of software process models such as the waterfall and evolutionary models. 6. Knowledge of software testing approaches such as unit testing and integration testing. 7. Knowledge of implementation issues such as modularity and coding standards. | |

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| **Program Name:** Master of Science (Information Technology) Lateral Entry | **Program Code**: MITM2PUP |
| **Course Name:** Computer Networks | **Course Code**: MITM2304T |
| **Course Outcomes:**   1. Learn the standard models used in Computer Networks 2. Learn the techniques used in transport Layer 3. Identify the protocols of Application Layer 4. Knowledge of network layer and the routing 5. Understand the working of Data Link Layer 6. Ability to identify types and topologies of network. 7. Learn the techniques of Network Security. 8. Knowledge about the computer Networks, protocols, hardware requirement for network | |

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| **Program Name:** Master of Science (Information Technology) Lateral Entry | **Program Code**: MITM2PUP |
| **Course Name:** Programming Lab-IV (Web Technology) | **Course Code**: MITM2305L |
| **Course Outcomes:**   1. Developing Java programs with a DBMS and perform insert, update and delete operations on DBMS table. 2. Developing a dynamic webpage using java script and HTML. 3. Developing server side java application called PHP to catch form data sent from client and store it on database. 4. Writing a well formed / valid XML document. 5. Developing e a server-side java application called Servlet to catch form data sent from client, process it and store it on database. | |

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| **Program Name:** Master of Science (Information Technology) Lateral Entry | **Program Code**: MITM2PUP |
| **Course Name:** Programming Lab-V (Java Programming) | **Course Code**: MITM2306L |
| **Course Outcomes:**   1. Ability to implement error handling techniques using exception handling 2. Finding the solution to specific problem using Java 3. Implement Object Oriented programming concept using basic syntaxes of control Structures, strings and Function for developing skills of logic building activity. 4. Use of multithreading for robust faster and efficient application development. 5. Programming using inheritance to describes faster application development can be achieved 6. Skill to write Java application programs using OOP principles and proper program structuring. 7. Implement Object Oriented programming concept using basic Operators and Expressions. 8. Ability to create packages and interfaces. 9. Implement reusability using interfaces and packages and describes faster application development can be achieved | |

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| **Program Name:** Master of Science (Information Technology) Lateral Entry | **Program Code**: MITM2PUP |
| **Course Name:** Computer Graphics | **Course Code**: MITM2401T |
| **Course Outcomes:**   1. Able to use line, circle and ellipse algorithms to design complex pictures with optimal complexities. 2. Ability to use various algorithms to remove hidden lines and hidden surfaces. 3. Ability to understand how data is displayed on visual display unit and how virtual reality effects are created. 4. Able to perform various 3D effects on images like moving, rotating, zooming, tilting and clip images using various clipping algorithms. 5. Understand computer graphics system and apply computer graphics in various areas of research including image processing, animation etc. 6. Understand how various illumination model can be used to perform various effects on images. 7. Understand how to shade images using gouraud and phong shading. 8. Able to perform various 2D effects on images like moving, rotating, zooming, tilting and clip images using various clipping algorithms. | |

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| **Program Name:** Master of Science (Information Technology) Lateral Entry | **Program Code**: MITM2PUP |
| **Course Name:** Linux Administration | **Course Code**: MITM2402T |
| **Course Outcomes:**   1. Able to use LILO boot manager, troubleshoot it and create virtual terminal on their machines. 2. Able to boot Linux operating system from floppy and understand root account 3. Able to install Linux Operating System and create partitions of hard disk. 4. Ability to use shell scripting in a program while solving complex problems. 5. Able to understand Linux file system and how to create, delete and move directories using commands. 6. Able to configure X windows manually and test it. 7. Able to use Linux commands to perform various actions. 8. Understand about Linux Operating System and min system requirement to use Linux. 9. Ability to use various editors on Linux and perform various task on it. 10. Understanding about mounting floppy or CD-ROM on new file system. 11. Able to do compression of files, make back up of system and recover system in uncertain situations. 12. Understanding about computer network, configuring the network and use firewall to maintain security. | |

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| **Program Name:** Master of Science (Information Technology) Lateral Entry | **Program Code**: MITM2PUP |
| **Course Name:** Research Methodology | **Course Code**: MITM2403T |
| **Course Outcomes:**   1. Ability to design research proposal and use induction and deduction. 2. Develop understanding on intellectual property rights, how to check plagiarism of research paper and how to do citation in research paper. 3. Ability to analyze and test cost incurred on research project. 4. Understand various primary and secondary data collection techniques to collect data for research. 5. Develop understanding on various kinds of research, objectives of doing research, research process, and research designs. 6. Able to understand about various national and international government and private agencies that provide grant for research and how to apply for research grant. 7. Able to present poster and research paper/poster in national and international conferences/seminars. 8. Develop understanding on how to use internet and computer in documentation of research proposals, thesis etc. 9. Develop understanding on how to formulate research problem and use various sources like journals, books, e-sources to do literature review. 10. Identify, explain, compare, and prepare the key elements of a research report; | |

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| **Program Name:** Master of Science (Information Technology) Lateral Entry | **Program Code**: MITM2PUP |
| **Course Name:** Artificial Intelligence | **Course Code**: MITM2404T |
| **Course Outcomes:**   1. Ability to differentiate knowledge and use it in knowledge base system. 2. Understand what artificial intelligence is and where it can be applied to solve problems. 3. Ability to do inference using propositional logic. 4. Able to understand what expert system is and how it perform inference to reach to some conclusion. 5. Apply prolog programming to build intelligent machines and perform various operations on these machines. 6. Understand how artificial intelligence can be used in game playing and planning. 7. Able to deal with the issues while manipulation and organization of knowledge. 8. Understand how to form clauses and use them to perform unification and resolution. 9. Ability to handle uncertain situations in intelligent machines. 10. Understanding regarding various phases used while processing natural languages. 11. Understand how to represent knowledge while constructing complex system and resolving issues with knowledge representation. 12. Understand how system uses various learning model to perform knowledge acquisition. | |

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| **Program Name:** Master of Science (Information Technology) Lateral Entry | **Program Code**: MITM2PUP |
| **Course Name:** Programming Lab-VI (Computer Graphics) | **Course Code**: MITM2405L |
| **Course Outcomes:**   1. Coding for line, circle and ellipse algorithms to design complex pictures with optimal complexities. 2. Ability to code programs to remove hidden lines and hidden surfaces. 3. Able to program various 3D effects on images like moving, rotating 4. Coding to shade images using Gouraud and Phong shading. 5. Able to program various 2D effects on images like moving and rotating | |

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| **Program Name:** Master of Science (Information Technology) Lateral Entry | **Program Code**: MITM2PUP |
| **Course Name:** Programming Lab-VII (LINUX Administration) | **Course Code**: MITM2406L |
| **Course Outcomes:**   1. Installation of Linux operating system. 2. Troubleshoot Linux and create virtual terminal on their machines. 3. Boot Linux operating system from floppy and use root account 4. Shell scripting to solve problems. 5. Using Shell commands to perform various actions. 6. Doing compression of files, make back up of system and recover system in uncertain situations. 7. Configuring Linux network. | |