

MATLAB Programming for Additive Manufacturing and 3D Printing (MPAM)

Two week online Faculty Development Program

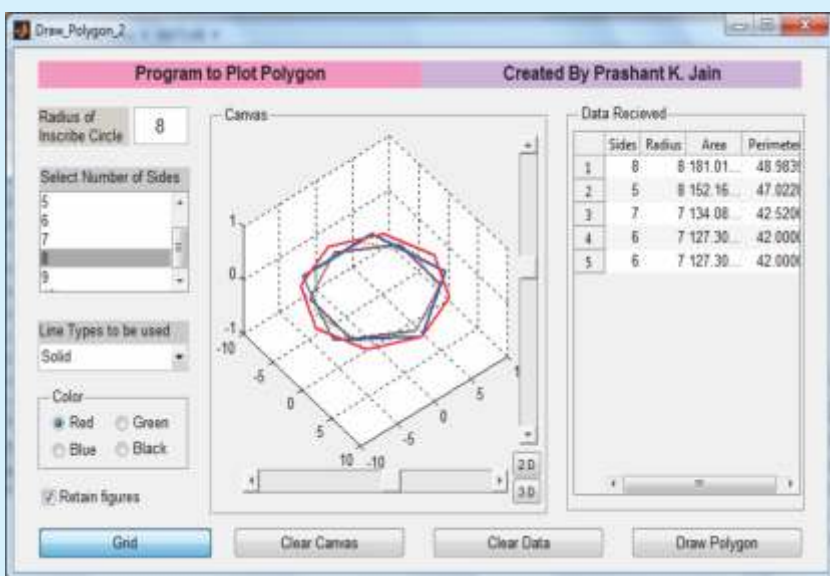
MATLAB

September 20-October 1, 2021

About the course

The course has been designed to impart programming knowledge and skills required for being an effective teacher with Applications of MATLAB. The Course will Introduce MATLAB as an effective communication tool for teachers and cover basics of programming to algorithm development and implementation using MATLAB and would be equally useful for the persons from all disciplines. Interactive programming sessions would be conducted to develop programming aptitude and algorithm thinking. Case studies related to programming required for additive manufacturing and 3D Printing would be discussed. All participants will be allowed to take and complete programming projects for sequential implementation of data preparation for additive manufacturing and 3D Printing such as STL file reading, repairing, slicing, contour generation, path planning etc.

COURSE CONTENTS



MATLAB User Interface, Basic Operations, Data Format, Handling Variables, Expressions and Matrices, Programming Basics for decision making, Conditional/logical Statement, Execution Control, Loops, 2D Plotting Visualization Using MATLAB, 3D Plots, Modifying plots using property editor, Automating Plots using Functions, Handling data in MS Excel and text file, Debugging a program, Algorithm development and Problem formulation, Building Graphical User Interface (GUI), Building GUIs with display of information, Developing GUI for Input/output functions, App development in MATLAB, Generating Executable Files and Stand-Alone Applications, Case Studies.

Overview and basics of Rapid Prototyping/Additive Manufacturing/3D printing, Need, Basic Principles and Steps in RP/AM/3DP, Process chain, Classification of Additive manufacturing processes, FDM and SLS Process, Applications and case studies, Data preparation, STL File Problems, STL File Manipulation and Repair Algorithms, STL file reading, repairing, slicing, contour generation, path planning, G&M code generation, open source software for 3D printing, Machine Demonstration, Part printing, Recent research trends in RP/AM/3DP, interdisciplinary aspects in RP/AM/3DP, Bio Medical applications.

HOW TO APPLY ?

Interested Faculty/research scholars may register for the course with registration fee Rs. 500/-

Industry persons and other interested persons are also encouraged to attend the course with registration fee Rs. 1,000/- and register before September 15, 2021.

For further details please visit <https://www.iiitdmj.ac.in/amec.iiitdmj.ac.in/>

VENUE & TIME

Workshop will be conducted online using the Zoom platform daily for four hours in two sessions from 3:30 pm onwards.

RESOURCE PERSONS

Dr. Pulak M. Pandey, Professor, IIT Delhi & Director, BIET Jhansi
Dr. Prashant K. Jain, Professor, PDDM IIITDM Jabalpur
Dr. Pavan K. Kankar, Associate Professor, IIT Indore
Dr. Amit Singh, Assistant Professor, MNIT Jaipur
Dr. Manu Srivastava, Assistant Professor, IIITDM Jabalpur
Dr. Sandeep Rathee, Assistant Professor, NIT Srinagar
Dr. Mohammad Taufik, Assistant Professor, MANIT Bhopal
Dr. Narendra Kumar, Assistant Professor, NIT Jalandhar

CONTACT US

Principal Course Coordinator
Dr. Prashant K. Jain

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