



# SRINIVAS UNIVERSITY

## COLLEGE OF ENGINEERING & TECHNOLOGY

Main Campus: Srinivas Nagar, Mukka, Surathkal, Mangalore, - 574 146, INDIA  
(Private University Established by Karnataka Govt. ACT No.42 of 2013. Recognized by UGC, New Delhi &  
Member of Association of Indian Universities, New Delhi); Administrative Office: GHS Road, Mangaluru-575001

Website: [www.srinivasuniversity.edu.in](http://www.srinivasuniversity.edu.in), Email ID: [admission@srinivasuniversity.edu.in](mailto:admission@srinivasuniversity.edu.in); Ph.: +91 824 2425966

### DEPARTMENT OF MECHANICAL ENGINEERING

### Master of Technology (M.TECH) COMPUTER INTEGRATED MANUFACTURING

#### About the Course:

**M.Tech. in Computer Integrated Manufacturing** is a two-year (4 Semester) full-time postgraduate engineering programme aimed at shaping the student's managerial and technical skills in the field of engineering. The aim of the Master of Technology in Computer Integrated Manufacturing (M.Tech.) program is to prepare students for successful careers in the field of Manufacturing & Implementation of Automation in Engineering as per international standards and to prepare them to become responsible and contributing members of the community.

Both automation & robotics are highly advanced and leading technologies ideal for public space and homes. With technological advancement, automation and robotics are now entering the advanced industrial space. The robotic concepts are used in various processes including, mining, chemicals, textiles and metals. The use of automation helps to increase the output and productivity. When it comes to automation, it is the extension of highly effective robotics. Due to this, it is also known as improved phase of the advanced industrial revolution.

The current industrial revolution looks for the best way to disrupt their existing processes as well as improve them by using programmable logic. The good thing about this technique is that it makes the task simpler to identify even a repetitive task or process. Even though automation and robotics technologies will interrupt the lives in the upcoming days, they can potentially create opportunities.

With the huge technology development, automated systems and robots are developed to simplify the difficult tasks and different industrial processes. The most impressive thing about automation system is that they have some specialized features to do even the tasks which are impossible for people. Specialization in automation also requires the student to apply a wide range of engineering principles in order to understand, modify or control the manufacture, delivery and maintenance of technology components in a broad range of industries. Graduates must know how to develop and maintain systems that cost-effectively optimise productivity and quality control.

**Duration:** 2 Years / 4 Semesters.

**Eligibility:** Candidates with B.Tech/B.E. Degree in Mechanical /Manufacturing / Industrial and Production Engineering / Mechatronics / AMIE Degree in concerned discipline or its equivalent from a recognized University.

#### Courses Offered:

**B.Tech. Mechanical Engineering**

**B.Tech. Robotics, Artificial Intelligence & Machine Learning**

**M.Tech. Robotics & Automation**

**M.Tech. Computer Integrated Manufacturing**

**M.Tech. Thermal Power Engineering**

**Ph.D.**

**PDF Engineering & Technology**

**D.Sc. Engineering & Technology**

## **Vision and Mission:**

### **Vision:**

To become a leading learning centre in Mechanical Engineering by providing students the necessary knowledge and professional skills for innovations, research and development and capability for serving industry and research establishments with a strong concern for societal needs and environment.

### **Mission:**

- Provide students the knowledge that builds within them, a strong foundation in the basic principles of mechanical engineering, problem solving abilities, analytical skills, soft skills and communication skills for their overall development.
- Develop talented and committed human resource with an aptitude for creativity, team-spirit, entrepreneurship abilities, for lifelong growth in their professional careers.
- Impart quality education to students to meet the needs of profession and society, and to promote high standards of professional ethics, transparency and accountability.

## **Special Features of the Programme:**

- Industry oriented syllabus with special focus on experimental learning
- Seminars, Technical Talks and Interactions with industrial experts
- Placement support and research oriented projects for every student.
- Focus on smart skill development & training on Mechanical Engineering practices.
- Opportunity for internship and project work in industry.
- Tie up with industries to get students trained in latest technology through industry sessions/ workshops.

## **Program Educational Objectives:**

- To prepare students to meet the industrial requirements at global level competitiveness.
- To develop the students analytical skills to enable them to understand real world problems and formulate solutions.
- To impart basic education to students in the areas of Design Engineering, Manufacturing Engineering and Thermal Sciences that will enable them to take up higher studies in these areas.
- To allow students to work in teams through group project works and thus help them achieve interpersonal and communication skills.
- To inculcate the habit of lifelong learning, adherence to ethics in profession, concern for environmental and regard for good professional practices.

## **Career Opportunities:**

The automation technology gets more fame among many sectors because of its matchless benefits. Most of the business also adopt this technology to take benefit of them. They help in speeding up the process of manufacturing and finds tremendous application in the fields of automotive, metals, textile, space energy etc. A course in Computer Integrated Manufacturing trains and educates a student in the field of Artificial Intelligence, Computer-Aided Manufacturing, CNC Coding, Computational Geometry, Robot Motion Planning, Programmable Logic Control and Micro Processing. One can expect jobs at Manufacturing Industries, Space Organizations, Private Industries, Automobile Industries and Industrial Tools. The students who study Computer Integrated Manufacturing at a College or Technical Institute are prepared for careers in Robot Technology, Computer Controlled Machine Programming, Robot Design and more. The candidates may pursue higher degrees in Robotics and Automation Engineering, Ph.D. degrees in reputed National and International Institutes.

### **Unique Features:**

The Department has been recognized as Research and Development Centre by Srinivas University for carrying out Research activities leading to Ph.D. Degrees. The department offers UG program namely, B.Tech. (Mechanical Engineering), and B.Tech. (Robotics, Artificial Intelligence & Machine Learning) in addition to the PG programmes M.Tech. Robotics & Automation, M.Tech. Computer Integrated Manufacturing, and M.Tech. Thermal Power Engineering. At present, the department has Ph.D. scholars working on Nanomaterials, Composites, Alternative fuels etc.

Being a private university, we have a feasibility to form our own syllabus. Thus we have approached several industrialists and have framed the syllabus according to the industry requirements and prepared an Industry oriented syllabus.

The students of the department will undergo internship in various reputed organizations all over the country. The students participate in various National and International level competitions, events regularly. The department possesses the state of the art research facilities to support the academic programs and research. Several projects of the students have been funded by the Government of Karnataka.

The department has a distinguished record in both teaching and research. The faculty members have excellent academic credentials and are highly regarded. They have publications at National and International levels. Several faculty members serve on the editorial boards of national and international journals, review technical articles for journals on a regular basis and organize conferences and workshops.

### **Course Structure:**

SEMESTER 1		SEMESTER 2	
Sl. No.	Subject	Sl. No	Subject
1	Numerical Methods for Engineers	1	Design of Robotic Systems
2	Mechatronics and Applications	2	Programmable Logic Controller
3	Computer Integrated Manufacturing Systems	3	Pneumatic & Hydraulic Control
4	Control System Engineering	4	Operation Management
5	Agile Manufacturing	5	Professional Elective II
6	Professional Elective I	6	Professional Elective III
7	CIM Laboratory	7	MAT Lab
8	Seminar	8	Seminar

Sl. No.	Professional Elective I	Sl. No.	Professional Elective II	Sl. No.	Professional Elective III
1	Hydraulics & Pneumatics	1	Logistics & Supply Chain Management	1	Machine learning
2	Internal Combustion Engines	2	3D Printing & Rapid Prototype	2	Metrology & Computer Aided Inspection
3	Theory of Plasticity & Metal Forming Process	3	Reliability Engineering	3	Tooling for Manufacture in Automation
4	Probability & Statistics	4	Product Design	4	Operations Research

SEMESTER 3		SEMESTER 4	
Sl. No.	Subject	Sl. No.	Subject
1	Seminar/Presentation on Internship (After 8 weeks from the date of commencement)	1	Project Work
2	Report on Internship	2	Report on Project work
3	Evaluation and Viva-Voce	3	Final Evaluation of Project Work and Viva-Voce

## Internship

- 1. Internship:** All the students shall have to undergo mandatory internship of 16 weeks during III semester and University examination shall be conducted at the end of 16 weeks. Internship shall be considered as a head of passing and shall be considered for the award of degree. Those, who do not take-up/complete the internship shall be declared as failed and have to complete during the subsequent University examination after satisfying the internship requirements.
- 2. Seminar /Presentation of Internship:** Students in consultation with the guide/co-guide if any, shall prepare and present a seminar after 8 weeks of Internship. IA marks shall be awarded by a committee comprising of HOD as Chairman, Guide/co-guide if any, and a senior faculty of the department. The IA marks awarded for Seminar/Presentation on Internship, shall be based on the evaluation of Internship Report, Presentation skill and Question and Answer session.
- 3. Evaluation and Viva-Voce:** Students in consultation with the guide/co-guide if any, shall prepare relevant Internship report, and present a seminar at the end of 16 weeks. IA marks shall be awarded by a committee comprising of HOD as Chairman, Guide/co-guide if any, and a senior faculty of the department based on the evaluation of Internship Report, Presentation skill and Question and Answer session. Examination marks shall be awarded by External Guide and the Internal Guide/co-guide if any, based on the evaluation of Internship Report, Presentation skill and Question and Answer session.

## Project Work

- 1. Project Work:** Students in consultation with the guide/co-guide if any, shall pursue literature survey and complete the preliminary requirements of selected Project work. Each student shall prepare relevant introductory project document, and present a seminar. IA marks shall be awarded by a committee comprising of HoD as Chairman, Guide/co-guide if any, and a senior faculty of the department. The IA marks awarded for project work phase, shall be based on the evaluation of Project Report, Project Presentation skill and Question and Answer session.
- 2. Final Evaluation of Project Work and Viva-Voce:** Students in consultation with the guide/co-guide if any, shall prepare relevant project report, and present a seminar. IA marks shall be awarded by a committee comprising of HoD as Chairman, Guide/co-guide if any, and a senior faculty of the department based on the evaluation of Project Report, Project Presentation skill and Question and Answer session. Examination marks shall be awarded by External Guide and the Internal Guide/co-guide if any, based on the evaluation of Project Report, Project Presentation skill and Question and Answer session.



## College of Engineering & Technology

CREATING INNOVATORS



## SRINIVAS UNIVERSITY

Educating the Next Generation