



Srinivas University

College of Engineering & Technology

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Dean's Message



Warm greetings to the readers!

A bulletin serves as a medium to disseminate information to its readers. Through this initiative, we hope to reach out to the new generation and moulders of student thoughts about the upheavals in the present technological scenario. Times are changing and as we look around, we see several disruptions in the regular day to day activities. "Progress is impossible without change, and those who cannot change their minds cannot change anything" said George Bernard Shaw. It is imperative that we go beyond and seek out new paths and be pioneers. The Srinivas University has a definitive edge over many other universities in that it has started new courses in emerging fields. In the field of engineering & technology, Nanotechnology, Cyber Security & Forensic Science, Cloud technology, Data science are novel fields where opportunities are opening up. The traditional engineering courses such as Mechanical, Civil, Electronics & Communication and Computer science, being the bedrock on which modern trends are built, continue to have a large following.

These few pages give an insight into the various departments of College of Engineering & Technology under the Srinivas University and the STEAM model of learning employed here. I'm sure that it will make interesting reading.

- *Dr. Thomas Pinto* ✍



National Conference on "Recent Trends in Civil Engineering" conducted by the Dept. of Civil Engineering on September 23rd. The conference was inaugurated by the Chancellor, Sri CA A. Raghavendra Rao and the Chief Guest was Dr. B.H.V. Pai, Joint Director MIT Manipal, MAHE.



STEAM Employability Learning Model

The STEAM Learning Model adopted by Srinivas University is a variation of the STEM model followed by other colleges & institutions. Engineering education is one of the prominent areas in science & technology education, finding many opportunities and facing many challenges in the 21st century due to the accelerated advancement of technologies in many areas of society. Technology is considered as lifeblood of all developments and solutions to all problems related to basic needs, advanced wants, and dreamy desires of human being in the society. Keeping engineering students in pace with such developments and adopting such newly emerging areas of technology in the current curriculum is an essential requirement of the education industry's progress.

It is believed that such an education model can prepare all-rounder students to face any challenges in their life and make them innovative in their working place. Apart from area-based specific focus during higher education which enhances knowledge and subject-specific skills, additional supporting skills like communication, proficiency in writing, generation of new ideas, enhancing competitiveness, preserving a vision in life, desire for learning and improvement in life, attitude towards life, respect for fellow-beings, self-control and such other qualities inculcate confidence and enhances leadership behaviour among the students to become winner in competitive society. These factors also enhance the employability of the students in industry specific areas where general skills and competency are essential for survival.

What is STEAM

STEAM is an approach to learning and development that integrates the areas of Science, Technology, Engineering, Arts & design and Mathematics.

Through STEAM, students develop key skills such as problem solving, creativity, critical analysis, teamwork, independent thinking, initiative, communication, digital literacy etc.

STEM Model as First School of Innovative Thought:

STEM (Science, Technology, Engineering, and Mathematics) as integrated single subject in school education is becoming popular in many countries and now spreading its roots to higher education system. Apart from school education, if college level curriculum is planned with STEM subjects, the scientific thinking and innovative ability of students can be improved to make them smart graduates who can adopt technology in decision making and problem solving. In STEM curriculum model at college level, a student has to study science, technology, engineering, and mathematics subjects in each year (preferable in semester) to be competitive in order to get further opportunities. Identifying such subjects in a systematic combination to make effective STEM interconnected model is the challenge for educators.

STEAM Model as Second School of Innovative Thought:

An improvement in STEM is argued by many researchers in education to make students as all-rounders. As per this argument, apart from learning for knowledge, skills, and experience which are specific for a given industry, student should also enhance their creative thinking and design abilities by involving in art and design related trainings. Hence a new model which integrates STEM with Arts & Design subjects is proposed. Based on studies it is realized that such a transdisciplinary STEAM model is the current requirement to enhance the creative thinking abilities among engineering graduates.

Why STEAM is important

Employer demand for graduates with these qualifications and skills is on the rise and will continue to increase as job roles diversify.

However, a large proportion of students are not studying STEAM subjects or considering STEAM related careers.

Even more of a concern is 60 per cent of young people are studying for jobs that will not exist or will be radically affected by automation in the next 10 to 15 years.

Employment opportunities in STEAM related industries are increasing each year. Employers are looking for:

- Analytical skills - Analysing and interpreting information and assessing the best course of action.
- Scientific skills - Breaking down complex scientific concepts and systems.
- Mathematical skills - Accurately gathering and analysing data. Applying simple and complex equations to solve problems.
- Technical skills - Troubleshooting and debugging a complex technological system or repairing a machine.

While obtaining STEAM related qualifications is extremely important, studying STEAM subjects also provides transferable skills that are essential to competing in today's job market.

The workplace of the future requires strong foundation skills in science and mathematics. To compete, young people are encouraged to study STEAM subjects, particularly the more challenging levels of science and mathematics. Choosing STEAM subjects opens the door to exciting and emerging careers, where young people can use their STEAM skills to solve real world problems and have the ability to adapt to the changing workforce.

STEAM education in the U.S. and other nations is increasing in popularity—more schools are implementing STEAM learning into their curriculum and making it an integral part of what they teach.

The benefits of STEAM education

Fosters ingenuity and creativity:

Ingenuity and creativity can pair with STEAM and lead to new ideas and innovations. Without ingenuity and creativity, the recent developments in artificial intelligence or digital learning would not be possible. These technologies were created by people who learned that if the human mind can conceive it, the human mind can achieve it.

Builds resilience:

During STEAM education activities, students learn in a safe

environment that allows them to fall and try again. STEAM education stresses the value of failure as a learning exercise, which will enable students to embrace mistakes as part of the learning process. This allows students to build confidence and resilience, which will enable them to keep going when the going gets rough. After all, failure is part of a process that ultimately leads to success.

Encourages experimentation:

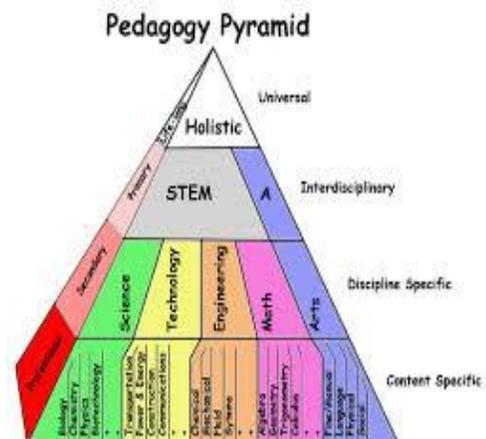
Without a little risk-taking, and experimentation, many of the technological advancements that have occurred in the last couple of decades would not be possible. Many of these innovations were created by people who were told that their ideas wouldn't work and their response was, "Let's try it and see." This type of attitude can be encouraged with STEAM learning during the undergraduate years. How can you accomplish this? By allowing students to experiment and take risks during learning activities.

Encourages teamwork:

STEAM education can be taught to students of all ability levels. Students of varying levels of ability can work together in teams to find solutions to problems, record data, write reports, give presentations, etc. The end result is students who understand how to collaborate with others and thrive in a team-oriented environment.

Encourages knowledge application:

In STEAM education, students are taught skills that they can use in the real world. This motivates students to learn, as they know that the skills that they acquire can be utilized immediately, and in ways that positively impact them and



their loved ones. The ability to apply their knowledge to new and novel tasks will bode well for them when they enter the workforce.

Encourages tech use:

STEAM learning teaches students about the power of technology and innovation. So, when students encounter new technologies, they will be prepared to embrace them, instead of being hesitant or fearful. This will give them the upper hand in the global landscape, as the world is becoming increasingly tech-centered.

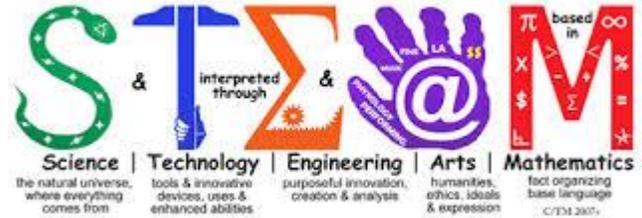
Teaches problem-solving:

STEAM education teaches students how to solve problems by using their critical thinking skills. By engaging in STEAM

learn experiences, students learn how to examine problems and then create a plan to solve them.

Encourages adaption:

To succeed in life, students have to be able to apply what they have learned to a variety of scenarios. STEAM education teaches them to adapt the concepts that they learn to various iterations of a problem or issue.



Overview of Branches, Scope and Opportunities

Computer Science Engineering

Computer Science Engineering is one of the most sort of disciplined Engineering. It is the Practical and Scientifically approach to its application. This is the most look creative and Competitive course to Study.

Computer Science Engineering involves Design and of computational process and computer. In computer science engineering, we will go through the Algorithms, Programming languages, Operating System, Database Management System, Computer Network, Computer Graphics and Artificial Intelligence. Software Products and Solutions are used in all most all the Industries across the World. Major Industries which uses Software are Banking, Insurance, Retail, Power, Exploration, Aeronautics, Defence, Consulting, Online Shopping and Big Data Analytics.

Software Industries are divided into Product Based Industries and Service Based Industries.

Product Based industries have their own software as the product or some System Platforms. They normally offer 4-5 LPA. Some Companies like Google, Microsoft and Adobe offer 8 LPA. These companies have Great working Culture and High Market Value, but they require a good knowledge of Aptitude and understanding in the Programming language. They have very competitive Requirement for selection.

Service-Based companies develop their Customer's System platforms and Customer's Software. They have Tight Timeline, Competitive Environment and Highly Challenging Jobs. They offer an initial package of 3 LPA, but after 2 plus years of experience, the salary growth is exponential based on the Performance. They require high skills in Programming languages and Communication Skills with Aptitude. These recruiters are HCL, Wipro, TCS, Infosys, etc.



Electronics & Communication Engineering

The goal of the Department of Electronics and Communication Engineering is to impart synergistic education in the field of Electronics & Communication and produce competent and resourceful young E&C Engineers with high technical knowledge and good practical skills and excel in wide variety of job profiles. To achieve this, curriculum provides a strong foundation in both the technological and theoretical aspects of E&C Engineering. It also provides abundant opportunities to students to work on self-designed mini-projects, develop communication skills, explore internship opportunities in industry and take part in national and international conferences and circuit/Software design contests. E&C department is committed to promote research, industrial interaction and multi-dimensional development of the students with theoretical as well as practical exposure. The course contents of this program deals with acquiring basic knowledge of Design and Development in Electronic Devices, IC Design, Microprocessor Applications, Analog Systems, Digital Systems, VLSI, Satellite and Microwave Communication Systems, Mobile Communication, Fiber Optics Communication, System Software and Embedded Systems.

The consumers need new devices and gadgets to support them in their day today life. All such devices need electronic circuits and software interface. The controlling programs are architected and developed by E&C engineers. This provides lots of job opportunities for Electronics and Communication Engineers not only in the core electronics industry but also in research and development software industry and government sectors.



Mechanical Engineering

B.Tech. in Mechanical engineering programme nurtures and develops students as young global Engineers. The programme lays emphasis on preparing students to become competent global business leaders and entrepreneurs by building their capabilities, knowledge, skills and attitude. The goal of B.Tech. programme is to enable students to become technically competent entrepreneurs in the vast technological sector and to prepare students to become responsible and contributing members of the community.

Mechanical Engineers find vast job opportunities in almost all the companies in the fields of Automobile Industries, Aerospace Industries, Chemical Industries, FMCG companies, Manufacturing companies, Production companies, Service based companies, Software Companies, Educational sector, Government departments like Ministry of Defence, Public Work Departments, Ministry of Transportation etc. Every industry needs the support of Mechanical Engineers for its working and success.

The TechnoTronics club with a vision of “imagination at work” and with a mission of Implementing Technical Knowledge to Real-Life Situations strives to engage students in building UAV's, Robots along with 3D printing technology.



Civil Engineering

Srinivas University's Bachelor of Technology in Civil Engineering (B.Tech.) program nurtures and develops students as young & dynamic engineers. The program lays emphasis on preparing students to become competent Civil Engineers with latest technological knowledge as per

global needs by building their capabilities, sound technical knowledge, skills and attitude. The aim of the Bachelor of Technology in Civil Engineering (B.Tech.) program is to prepare students for successful careers in the field of Civil Engineering as per international standards and to become responsible and contributing members of the community.

Civil Engineering is one of the most traditional branches of Engineering deals with the construction of residential, commercial, industrial and Civil engineering structures both in Private and Public sector. Civil Engineering projects includes construction of roads, buildings, bridges, airports, tunnels, dams, break waters, ware houses, power plants, treatment plants, canals, drains, water supply and sewage systems, harbours, docks, and so many other structures which in both Private and Public sector.

Civil Engineers have opportunities in construction / contracting / consultancy companies, valuation sectors like banks and insurance companies, government departments like Municipalities, Public Work Departments, Ministry of Housing, Ministry of Transportation, Electricity and Water Authority Departments, Urban Development or Town Planning Departments, Real Estate Agencies, National Highway Authority, etc. Now a day Civil Engineers are also finding suitable placements in the field of construction materials manufacturing fields and marketing of the civil engineering products.



Nano Technology

Srinivas University is the only University in Karnataka offering B.Tech. in Nano Technology.

Nano Technology UG program under Srinivas University, Mangaluru is an innovation in modern education system. Nano technology is a multidisciplinary field that currently recruits approach, technology and facility available in conventional as well as advanced avenues of engineering, physics, chemistry and biology. At present there are more than 2000 industries working on nano technology and its applications. The present industrial revolution in nanotechnology needs well trained man power to meet the need.

Sometimes working on something small can lead to a big career. That is true for engineers working in nano technology, where new discoveries—and applications for them—are constantly being made, leading to plenty of job opportunities. The career opportunities after B.Tech in Nano Technology includes jobs in industries, higher education (Universities: more than 30 in India and more than 250 abroad offering master degree and doctoral degrees), and R&D (more than 10 central institutes in India and more than 200 abroad; the main R&D works in all research centres are related to nano science and technology). New research and educational centres are getting established every year creating central government jobs.

Computer Science (Cyber security and Forensic Science)

In the modern era crime criminals use innovative techniques in order to commit crime and escape the judiciary for which the investigating officers are facing problem.

In this new digital age, protection of online information is crucial. With increasing number of Internet users, cyber security threats cause harm to many unsuspecting victims. With all the obvious advantages computers and internet provides, it also brings along a darker side where unsuspecting people/Firms/Companies become victims of cybercrime. Cybercrime in a short span of a decade has become a top level world wide security threat.

Guarding data and reducing the impact of network security breach are a key challenge for cyber security experts.

The present course offered by Srinivas University will give students a solid foundation in theoretical and practical aspects of Computer Science, network security, software security, information security, Computer Forensics, system security measures, penetration testing and vulnerability assessment.

Our syllabus is framed in such a way that students study the concept of Cyber crime, investigation and examination of Cyber crime evidences in a detailed manner. The topics give them overall knowledge regarding application of Computer Science and Forensic Science. The student will also be able to examine the digital evidence presented to him/her in a Forensic perspective and also handle information security related incidents.

Career opportunities are numerous in the following fields; Ethical Hacker, Penetration tester, Information security manager, Security consultant, Forensic investigator, Forensic Auditor, Security programmer, Malware analyser, Computer systems Engineer, Network system administrator, Web developer etc.



Departments of the Srinivas University

- College of Engineering & Technology
- College of Business Management and Commerce
- College of Computer & Information Sciences
- College of Social Sciences & Humanities
- College of Hotel Management & Tourism
- College of Physiotherapy
- College of Allied Health Sciences
- College of Education



Srinivas Group of Institutions

- Srinivas Institute of Medical Sciences & Research Centre
- Srinivas Institute of Dental Sciences
- Srinivas College of Physiotherapy & Research Centre
- Srinivas College of Pharmacy
- Srinivas Institute of Nursing Sciences
- A. Shama Rao Nursing School
- Srinivas Institute of Technology
- Srinivas School of Architecture



About Srinivas University

Srinivas University is a State Private Research University in Mangalore, Karnataka, India established in 2013 by Karnataka State Act. Srinivas University is the flagship of 18 Srinivas Group of Institutions started by A. Shama Rao Foundation, Mangalore, India, a private Charitable Trust founded in 1988 by an eminent Chartered Accountant A. Raghavendra Rao. A. Shama Rao Foundation has started many professional colleges in Mangalore which include Srinivas Institute of Medical Sciences and Research Center, Srinivas Institute of Dental Sciences, Srinivas Institute of Technology, Srinivas College of Pharmacy, Srinivas Institute of Nursing Sciences, A Shama Rao Nursing School, Srinivas Integrated Campus. Srinivas College of Hotel Management, Vijayalakshmi Institute of Hospitality Sciences, Srinivas First Grade College, Srinivas School of Engineering, Srinivas Institute of Management Studies, Srinivas College of Physiotherapy, Srinivas School of Business, Srinivas School of Management, Srinivas College of Education, Srinivas Institute of Social Work.

Presently, Srinivas University offers undergraduate, postgraduate, and research courses under 8 Faculties/Colleges with more than 70 courses. The University made innovations in designing and starting new super speciality programmes both at UG, and PG level as per present and future industry relevance, innovations in examination system through focus on continuous evaluation and to make it foolproof. The University has established networking with many industries, universities and education service providers to substantially improve the quality and weightage of the courses and degrees respectively.

Standout Features of the college

- **Situated in a Serene Environment: Conducive for Learning**
- **Industry Ready Curriculum**
- **International Collaborations**
- **Highly Accomplished Faculty**
- **Top Notch Learning Facilities**
- **Rich & Hi-Tech Library Resources**
- **Strong Corporate Connections**

- **Experiential Learning**
- **Active Mentoring Cell**
- **Research Oriented Approach**
- **Robust Pre-placement Training & Excellent Placements**
- **STEAM Model of learning**
- **Employability Skill Enhancement Program**



Book Post

