M.Tech. Computer Science & Information systems

Planning to specialize with a Master's in Computer Science?? A Master's in Computer Science can give you a specialized focus on the world of technology, helping you develop your skills and career prospects. Have a glimpse at the opportunity to grab a Master's degree that is valued worldwide….

ABOUT THE DEPARTMENT

Department of Computer Science and Engineering is a center of excellence in teaching and research in computer science supported with an expert team of well qualified, experienced and committed faculty members. The department currently offers a B. Tech. programme in Computer Science & Engineering and P.G. programme in Computer Science with specialization in Information Systems. The department is currently approved as a research centre under KTU as well.

Department of Computer Science houses a strong research community with significant reputation comprising of the faculty team and the PG students. Students are encouraged to participate and present their work at major national and international conferences, seminars and workshops and publish their findings in reputed international conferences and journals. Numerous opportunities are set for our students to collaborate in the national and international turf, through our research partnerships and links with industrial collaborators.

Dynamic team of faculty members, heading the research groups in the department, contributes to the major research areas like Cloud Computing, Computer Networking, Computer Architecture, Computer Security, Data Mining, Image Processing, Natural Language Processing, Pattern Recognition & Fault Tolerance and Theoretical Computer Science. PG students get an opportunity to collaborate with these research groups to publish papers as part of their PG project work.

Department has excellent research labs with the latest industry standard tools to facilitate the ongoing research works. Hands on training on tools like BookSIM, MultiSIM, GEM5, Verilog, OpenMP, MPI, NLTK, WEKA, OpenML, CloudSIM, MapReduce, Apache Spark, Jupyter and SciPY is offered to students to improve their skill set. Apart from this, specialized labs like Cloud Computing Lab, High Performance Computing Lab and FAB Lab helps the students to focus on the research in the areas of their specialization.

ABOUT THE COURSE

The M. Tech. programme in Computer Science and Information Systems (code: CSIS) is a master's programme offered to aspirants who are interested in advanced learning and research in any area of computer science. The main objective of the course is to impart specialized

knowledge in computer science theories, strategies and trends over wide span of the world of computer science.

The courses offered in the first semester of M.Tech. programme provides an understanding about the core concepts in computer science. The subsequent semesters aim at providing avenues for specializing in one or more streams within computer science. A student may choose his stream of interest by selecting the appropriate electives offered by the department.

The highlight of this course is the flexibility that it offers for a student to gain an advanced learning experience in the field of his interest. After the successful completion of the course, our students have a handful of wide-ranging job options which will help them to have a promising and rewarding career in the future.

Key skills gained

- Knowledge of a wide range of upcoming fields in Computer Science
- Proficient knowledge of a range of programming languages
- In depth concepts of software architecture, engineering and design
- Skills in computing software, tools and packages
- Mastery over a wide range of computer-based systems

Common skills gained

- Problem-solving and decision-making skills
- Written and oral communication skills, including presentations and report writing
- Teamwork and Leadership skills
- Analytical and Creative thinking skills
- Time management and organization skills
- Ability to adapt with rapid technological changes
- Ability to understand complex numerical data

WHY OPT FOR THIS COURSE?

➢ **Excellent Placements**

Wide opportunities are available to the PG students to opt for a career in the IT sector after their P.G course. As a result students attain a good number of job opportunities in reputed MNC's as part of the initiatives taken by the placement cell of the college.

➢ **Internships**

Internships are one of the best ways to get an on-the-job experience. Internship programs are offered with well-known industries like and academic institutions like NITs and IITs.

➢ **Paper publications**

Students are encouraged to take up research oriented projects and publish their findings in reputed journals and conference proceedings. The papers published act as an added advantage for students seeking admission for a Ph.D. course in and abroad our country.

➢ **Funded Projects**

An opportunity for students to work in funded projects along with the faculty team will help the students to rapidly improve their technical skills in a realistic environment outside the classroom.

➢ **Job Opportunities**

A master's in computer science allows you to develop many desirable skills which are useful in a wide range of industries. Career opportunities are open as:
  o Research Associate
  o Assistant Professor
  o Software Engineer
  o Game Developer
  o Cyber Security Consultant
  o Multimedia Programmer
  o Systems Engineer
  o Support Manager
  o Application Developer
  o Software Tester
  o Database Manager
  o Business Analyst
  o Systems Analyst
  o Software Architect
  o UI/UX Designer

➢ **Ph.D. research opportunities**

Getting a master's degree is a stepping stone to do exciting Ph. D. research anywhere in the world. We are privileged to have our M. Tech. alumni pursuing Ph.D. course in premier institutions like NIT and Ulster University, UK.

➢ **Graduate Assistantship for eligible students**

Along with their regular studies, students get an opportunity to work as a graduate assistant in the department with a decent stipend.

COURSE STRUCTURE

The core papers offered are as follows:

- Advanced Data Structures
- Operating System Design
- Computer System Design and Architecture
- Compiler Design

Other courses offered under the main streams are as follows:

Stream 1: Image Processing
- Digital Image Processing
- Computer Vision
- Content Based Image and Video Retrieval

Stream 2: Software Engineering
- Object Oriented Software Engineering
- Advanced Software Testing
- Software Architecture
- Software Project Management

Stream 3: Data analytics
- Data Mining Concepts
- Social Network Analytics
- Advanced Database Concepts
- Ontology and Semantic Web

Stream 4: Security
- Foundation of Information Security
- Computer Security and Applied Cryptography
- Mobile Network Security
- Cyber Forensics
- Advanced Information Security Concepts

Stream 5: Networks
- Wireless Communication
- Advanced Computer Networks
- Wireless Sensor Networks

Stream 6: High Performance Computing
- Parallel Computer Architecture
- Cloud Computing

OUR SPECIALIZED LABS

1. **Cloud Computing Lab**

   Cloud Computing Lab is an interdisciplinary research lab at RSET aimed at providing cloud computing research facilities for students and the staff researchers. Cloud computing is a latest technology where computing resources of a cluster (a group of computers) are made available to the users as a single entity, which can be easily be accessed and provisioned using virtualization technique. RSET Cloud Computing Lab implements an OpenStack middleware with a complete three-node architecture that consists of a control node, network node and three compute nodes. The system is capable of creating 18 in-house virtual nodes for research and learning purposes at present, and expected to increase its capability in the coming years.

2. **High Performance Computing Lab**

   One of the most important requirements for high-end learning and research in any engineering discipline in this modern era is free access to a High Performance Computing (HPC) facility. RSET has installed a medium sized HPC cluster with up to 10 TerraFlops capability, with a technology transfer and technical assistance agreement with HPCNowCounsultors Inc., Barcelona, Spain. The capital investment in this high end research lab is about INR 50 lakhs.

3. **FAB Lab**

   RSET in association with Kerala Technological University and Kerala Start Up Mission has installed a FAB Lab within the campus. A FAB Lab is a technical prototyping platform for innovation and invention initiated by Massachusetts Institute of Technology (MIT), USA. It will empower students and researchers to implement self-driven projects in electrical, electronics, computer science and IT domains with the help of next generation tools and software, as well as fabrication work flows and processes. FAB Lab is also considered to be the cradle of entrepreneurship, where prototyping of new products will help in emerging new start-ups from student community.

Current Statistics

In the current 2017-19 M.Tech CSIS batch 90% students have been placed or attained internships in reputed companies like Infosys, CTS, Benz, Bosch, KMRL etc.

WHAT OUR STUDENTS SAY …

I joined this course with a lots of anxiety. After joining the campus and spending one year, I am happy to say that the course is completely in line with the expectation of current market trends. Since most of the subjects taught, research topics and the infra structure support are very advanced and intended with clear vision. SDN, 3D printing, Big Data, HPC, IoT are few of them. I encourage that if you are a person looking for such a campus, no need to have a second thought.

Ritz Sebastian, M.Tech. CSIS 2015-17 batch

The influence of Rajagiri has been exceptional in my life. Every peak of achievement that I have scaled in my life has the signature of Rajagiri in it. I could work at one of the prestigious institutions of India, the National Institute of Technology, Surathkal (NITK), at the very initiative of the respected faculty members at Rajagiri. Thanks to the relentless support of my faculty members, I could achieve third place at the University level for my MTech. I am thankful to Almighty for being placed at such an institution where dedication is second to none. The organization provides so many facilities for learning and updating our knowledge. I am extremely grateful to the management and staff for their tireless efforts to ensure a bright and prosperous future for us. I wish my Alma Mater the very best.

Christina Terese Joseph, M.Tech CSIS 2012-14 batch, currently PhD. Scholar in NIT Surathkal.

COURSE ENTRY REQUIREMENTS

B. Tech. graduates in Computer Science or Information Technology are eligible for an admission to M.Tech., Computer Science and Information Systems.

For more details contact:

Ms. Amitha Mathew: 9947530422
Ms. Anu Maria Joykutty: 9746283111