ENGINEERS WITH SOCIAL RESPONSIBILITY

(/)

B.Tech. (Honours) in ICT with minor in Computational Science

Program Overview

Program Structure

DA-IICT launched the unique four-year undergraduate program leading to the degree of B.Tech. (Honours) in ICT with minor in Computational Science from 2013-14 academic session.

The ICT embodies the convergence of Computer and Communication systems and has obtained wide acceptance as a distinct discipline. It is also expected that ICT graduates would enjoy a special niche only if they have certain performance capabilities not found in conventional CSE and/or ECE graduates. Logically this convergence takes place at the systems level, but at the same time it is necessary to accept a certain level of granularity as one goes down to the level of circuits, devices and materials. All programs are designed to operate on a semester-based framework that follows choice-based credit system.

Computational science involves use of mathematical models, numerical methods, quantitative analysis techniques, advanced computing capabilities and IT knowledge to understand and solve complex science, engineering and social problems aimed in improving products, processes, and work-flows. The institute started this program in the area of Computational Science to

impart the necessary knowledge and insight to the students to build computational models to understand, analyze and address fundamental problems in the areas of societal importance.

The minor in CS program is focused on two main lines – theoretical learning and practical implementation. The students must take core/group-elective courses in the areas of Mathematics, Physics, Numerical and Computational Methods, Modeling and Simulation, High Performance Computing, Parallel Programming, Data analysis and Visualization. The electives are further designed to sharpen this skill-set by providing domain knowledge in interdisciplinary areas ranging from engineering to biological applications.

The B.Tech. (Honours) in ICT with minor in Computational Science requires a student to complete additional 18 credits (four courses) in the core and elective components of Computational Science in addition to the B.Tech. in ICT program requirement.

Programme Outcomes (POs)

PO No.	Programme Outcomes
PO1	**Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	**Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences
PO3	**Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4	**Conduct investigations of complex**

	problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	**Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
PO6	**The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	**Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	**Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	**Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	**Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO11	**Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage

	projects and in multidisciplinary environments.
PO12	**Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

The Programme Specific Outcomes (PSOs) set the following goal:

After the successful completion of the B.Tech. (Honours) in ICT with minor in Computational Science programme, students will have:

PSO No.	Program Specific Outcomes (PSOs)
PSO1	To apply the theoretical concepts of computer engineering and practical knowledge in analysis, design and development of computing systems and interdisciplinary applications.
PSO2	Develop system solutions involving both hardware and software modules
PSO3	To work as a socially responsible professional by applying ICT principles in real-world problems.

Program Outcomes (POs) & Course Outcomes (COs) of The Program (https://www.daiict.ac.in/sites/default/files/other-files/POs-PSOs-COs_ver2.pdf)

Syllabus of The Program (https://www.daiict.ac.in/sites/default/files/other-files/Syllabus.pdf)

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NAAC

- SSR & Evaluative Reports Addendum 2017 (/sites/default/files/NAAC-Addendum-final.pdf)
- SSR 2015 (/sites/default/files/NAAC-Self-Study-Report.pdf)
- Evaluative Report 2015 (/sites/default/files/NAAC-Evaluative-Report.pdf)

CoE, Government of Gujarat

- Application submitted (/coe-government-gujarat)
- Audited Accounts (/coe-government-gujarat)
- Meeting of the Governing Bodies (/coe-government-gujarat)

NIRF

- INDIA Ranking 2023 DCS Submitted (/nirf-national-institutional-ranking-framework)

Other Links

- **Prof. S.C. Sahasrabudhe - A Memoir (https://www.daiict.ac.in/prof-sc-sahasrabudhe-memoir)**
- **Holidays 2023 (/sites/default/files/other-files/Holidays2023.pdf)**
- **Ecampus (https://ecampus.daiict.ac.in/webapp/intranet/index.jsp)**
- **Intranet (http://intranet.daiict.ac.in/)**
- **Courses (https://moodle.daiict.ac.in/)**
- **Capacity Development and Skills Enhancement Initiatives (/capacity-development-and-skills-enhancement-initiatives)**
- **Parents (/parents)**
- **CEP (cep)**
- **DCEI (http://ceid.daiict.ac.in/)**
- **Proforma for Inspection by UGC (/sites/default/files/UGCproforma_30Dec2015.pdf)**
- **Committees (https://www.daiict.ac.in/committees)**
- **Anti-Ragging Committee (/sites/default/files/other-files/Anti-Ragging_Vigilance-Committee_Faculty-and-Staff_2022-23.pdf)**
- **DA-IICT Lecture Series (/da-iict-lecture-series-dls)**
- **Synapse (https://instagram.com/synapsedaiict)**
- **Concours (http://concours.daiict.ac.in/)**
- **Tree Survey (/tree-survey)**

Group Website

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