School of Science & Engineering (SSE)

Innovation, Excellence and Creativity in Engineering

B.Sc. in

- Computer Science & Engineering (CSE)
- Electrical & Electronic Engineering (EEE)

SCHOOL OF SCIENCE AND ENGINEERING

Visit SSE Website

www.ciu.edu.bd/sse-details

CHITTAGONG INDEPENDENT UNIVERSITY (CIU)

School of Science & Engineering (SSE)

Background:

The School of Science & Engineering (SSE) of Chittagong Independent University (CIU), erstwhile SECS of outer campus of IUB at Chittagong, was established in 2013. Today this school continues to be one of the major schools of CIU aiming to produce world class engineering graduates. In addition to Computer Science & Engineering (CSE), Electrical & Electronic Engineering (EEE) and Electronics & Telecommunication Engineering (ETE) programs, SSE has added one Post Graduate Diploma (PGD) program in Information and Communication Technology (ICT). All these programs follow the UGC approved syllabus and curriculum. Considering only permanent faculties currently the school's teacher student ratio is 1:14. Adjunct faculties from Chittagong University of Engineering and Technology (CUET), University of Chittagong (CU) and engineering professionals from different organization are engaged if required. In order to meet the quality and competency of our students we regularly arrange seminars and workshops, a week or a month-long training programs e.g. Android Apps Development, Robotics, Programmable Logic Controller (PLC) and Industrial Automation, Advanced Programming, AI and 5th Industrial Revolution, Renewable and Sustainable Energy Development etc. Moreover, SSE arranges various competitive programs like National High School Programming Contest (NHSPC), Inter Schools & Colleges Programming Contest, Workshop on Programming for High School and College teachers, CIU Tech fest, CIU-SSE Robo race, SSE Cultural Nights etc. We have shown our commitment towards local society too. Monthly seminars from faculty members have inspired the academics and students. To provide opportunities of global networking with students, graduates and professionals that helps build critical skills outside the classroom, SSE has launched Central Student Club (iSEC), SSE Programming Club, Robotics Club, IEEE Student Branch at CIU etc. IEEE Student Branch is the only professional and international student organization in SSE which has put CIU in the map of the world's largest technical society.

Our Mission :

Producing skilled human resources through quality education and grooming them as professional leaders for 21st century to meet the demands of sustainable development of the country.

* Providing state-of-the-art resources that contribute to achieve excellence in teaching-learning, research and developmental activities.

* Bridging the gap between industry and academia by framing curricula and syllabi based on industry and social needs.

Our Vision:

To become a front-runner in bridging out globally competent engineers, innovators, researchers and entrepreneurs through quality engineering education. Delivering insightful human resources enlightened with logical bend of mind and thereby contribute value to the knowledge-based economy and society.

Objectives :

The objectives of SSE are to disseminate, create and advance knowledge, wisdom and understanding and to offer education of high standard by teaching, research, training and extension programs. Our effort is to give effect to the spirit of national and international goodwill, partnership and collaboration.

* Develop interdisciplinary, problem-based academic programs aligned with engineering and technical education.

* Integrate IT and other technology based resources from around the globe.

* Create applied, evidence-given research activities on problem solving of national and international forum.

WHY SHOULD YOU CHOOSE CIU?

- Best scholarship and waiver offers in Chattogram
- Dean's Award for the students with best academic results
- Job & Internship Opportunities
- Our alumni network spans the globe, reaching every corner in the world
- All classrooms & labs equipped with modern amenities
- Well-equipped state of the art laboratories and library
- Credit transfer facilities for local and foreign students
- Experienced faculty members with PHD degrees

Structure of Program Offered

COMPUTER SCIENCE & ENGINEERING

CSE

Language and General Education Courses : 21 Credits
Basic Science and Mathematics Courses : 22.5 Credits
Other Engineering Courses : 9 Credits
Program Core Courses : 92.5 Credits
Technical Elective Courses : 15 Credits
Total Credit Hours : 160

ELECTRICAL & ELECTRONIC ENGINEERING

EEE

Language and General Education Courses : 24 Credits
Basic Science and Mathematics Courses : 22.5 Credits
Other Engineering Courses : 9 Credits
Program Core Courses : 88 Credits
Technical Elective Courses : 16.5 Credits
Total Credit Hours: 160

Detailed Fee Structure

Details	Amount (BDT)	Total Amount (BDT)
Admission Fee (Once in 4 years)	15,000/-	= 15,000/-
Activity Fees for semester (12 Semesters)	5,000 X 12	= 60,000/-
Tuition Fee (Per Credit)	4,000 x 160	= 6,40,000/-
	Total Amount	= 7,15,000/-

In Words (Taka Seven Lac Fifteen Thousand only)

UGC Recommended Grading System

Numerical Score	Letter Grade		Grade Point
80% and above	A+	(A Plus)	4.0
75% to less than 80%	A	(A Regular)	3.75
70% to less than 75%	A-	(A Minus)	3.5
65% to less than 70%	B+	(B Plus)	3.25
60% to less than 65%	B	(B Regular)	3.0
55% to less than 60%	B-	(B Minus)	2.75
50% to less than 55%	C+	(C Plus)	2.5
45% to less than 50%	C	(C Regular)	2.25
40% to less than 45%	F		
Less than 40%			

The Syllabus of B.Sc. in CSE

Language and General Education Courses

- Bangla Bhasha
- Introduction to Economics
- Principles of Accounting
- Live-in-Field Experience
- Functional English
- Introduction to Sociology
- History of Emergence of Independent Bangladesh
- Industrial and Operational Management

Basic Science and Mathematics Courses

- Engineering Physics
- Calculus
- Vector Analysis and Complex Variables
- Transformation Theory
- Engineering Physics Lab
- Engineering Chemistry
- Differential Equations and Matrices
- Engineering Statistics

Other Engineering Courses

- Introduction to Electrical Engineering
- Electronic Devices and Circuits
- Introduction to Electrical Engineering Lab
- Electronic Devices and Circuits Lab

Core Courses

- Structured Programming
- Object Oriented programming
- Web Programming
- Digital Logic Design
- Microprocessor and Interfacing
- Computer Organization and Architecture
- Introduction to Internet of Things
- Data Structure
- Algorithm Design and Analysis
- Artificial Intelligence
- Machine Learning
- Database Management Systems
- Data Communication
- Computer Networks
- Operating Systems
- Software Engineering
- Computer Graphics
- Theory of Computing
- Compiler Design
- Senior Project/Thesis
- Structured Programming Lab
- Object Oriented programming Lab
- Web Programming Lab
- Digital Logic Design Lab
- Microprocessor and Interfacing Lab
- Discrete Mathematics
- Introduction to Internet of Things Lab
- Data Structure Lab
- Algorithm Design and Analysis Lab
- Artificial Intelligence Lab
- Machine Learning lab
- Database Management Systems Lab
- Data Communication Lab
- Computer Networks Lab
- Operating Systems Lab
- Software Engineering Lab
- Computer Graphics Lab
- Information Security
- Compiler Design Lab
- Internship

Technical Electives

Decision Support System	System Analysis and Design
Digital Image Processing	Digital Image Processing Lab
Data Mining	Data Mining Lab
Big Data	Big Data Lab
Natural Language Processing	Natural Language Processing Lab
Neural Network and Fuzzy Logic	Neural Network and Fuzzy Logic Lab
Numerical Methods for Engineers	Numerical Methods for Engineers Lab
Basic Graph Theory	Basic Graph Theory Lab
Robotics	Robotics Lab
Digital Electronics and Pulse Techniques	Digital Electronics and Pulse Techniques Lab
Electrical Drives and Instrumentation	Electrical Drives and Instrumentation Lab
VLSI Design	VLSI Design Lab
Human Computer Interaction	Mathematical Analysis for Computer Science Lab

The Syllabus of B.Sc. in EEE

Language and General Education Courses

Bangla Bhasha	Functional English
Introduction to Economics	Introduction to Sociology
Principles of Accounting	History of Emergence of Independent Bangladesh
Live-in-Field Experience	Industrial and Operational Management

Basic Science Courses & Mathematics Courses

Engineering Physics	Engineering Physics Lab
Calculus	Engineering Chemistry
Engineering Statistics	Differential Equations and Matrices
Numerical Methods	Vector Analysis and Complex Variables

Other Engineering Courses

Structured Programming	Structured Programming Lab
Microprocessor and Interfacing	Microprocessor and Interfacing Lab

Core Courses

Electrical Circuits I	Electrical Circuits I Lab
Electrical Circuits II	Electrical Circuits II Lab
Electrical Machines I	Electrical Machines I Lab
Electrical Machines II	Electrical Machines II Lab
Electronics I	Electronics I Lab
Electronics II	Electronics II Lab
Signals and Systems	Electrical and Electronic Service Design
Principles of Electromagnetics	Transmission and Distribution of Electrical Power
Digital Electronics	Digital Electronics Lab
Measurement and Instrumentation	Measurement and Instrumentation Lab
Power Systems Analysis	Power Systems Analysis Lab
Linear Control Systems	Linear Control Systems Lab
Analog Communication	Analog Communication Lab
Microwave Engineering	Power System Protection
Power Electronics	Power Electronics Lab
Digital Signal Processing	Digital Signal Processing Lab
Digital Communication	Digital Communication Lab
Fundamentals of Mechanical Engineering	Engineering Drawing
Internship	Senior Project/Thesis

Technical Electives

Object Oriented Programming	Object Oriented Programming Lab
Renewable Energy Conversion	Renewable Energy Conversion Lab
Power Plant Engineering	Electrical Drive Systems
Electrical Engineering Materials	Power System Optimization
Energy and Environment	Special Topics in Electrical Engineering
Semiconductor Physics and Devices	Optoelectronics and Photonics
VLSI Technology	VLSI Technology Lab
Nano Electronics	Artificial Intelligence and Machine Learning
Wireless Communication	Wireless Communication Lab
Fiber Optics Communication	Fiber Optics Communication Lab
Data Communication and Networking	Data Communication and Networking Lab
Cellular Mobile and Satellite Communication	Cellular Mobile and Satellite Communication Lab
Robotics	Robotics Lab
Multimedia Communication	Multimedia Communication Lab
Mobile Application Development	Mobile Application Development Lab
Image Processing	Image Processing Lab
Biomedical Instrumentation	Biomedical Instrumentation Lab
Internet of Things	

Offer & Scholarship

Semester Fee waiver for admission during Admission Festival day

Flexible Installment option for tuition fees payment

Special offer for students with excellent academic result in CIU

12.5% flat waiver on tuition fees for all

Additional discount on tuition fees to support meritorious students in need

100% scholarship on first semester tuition fees for GPA 5 holders in HSC & SSC

CGPA (Out of 4.00)	Total Cost (According to CIU result)
3.9+	75,000 BDT
3.8+	2,35,000 BDT
3.7+	3,95,000 BDT

Admission Requirements

- HSC and SSC certificates with minimum CGPA of 3.00 in both (for offspring of Freedom Fighters a total of GPA of 5.00 in SSC & HSC)
- Must have Math and Physics in their HSC
- 'O' Level in 5 (Five) subjects and 'A' Level in 2 (Two) subjects with minimum 'B' Grade in four subjects and 'C' Grade in three subjects
- International Baccalaureate
- High School Diploma
- Other 12 years equivalent degree must have the equal schema from the education board
- For credit transfer students at least 40% should be completed at CIU. Other requirements are as per CIU policy.

University Facilities

- Quality education with international setup and world class facilities in Chittagong
- North American Course curriculum with open credit system
- Multimedia class room equipped with air-condition
- State of the art IT facilities and fully Wi-Fi Networked campus
- Student clubs which organize round the year co-curricular events
- Outcome based education & curriculam
- Flexible credit transfer facilities to foreign universities
- Collaborations with top universities and institutions abroad

Featured Laboratories

Physics Lab

The Engineering Physics Lab at CIU offers an interactive and immersive environment for students to explore and understand core principles of physics. With modern equipment and a wide range of experimental setups, the lab provides students with the opportunity to bridge the gap between theoretical knowledge and practical application. The facility is designed to cultivate analytical skills and encourage innovative thinking, essential for addressing complex engineering challenges. By engaging in hands-on experiments, students gain valuable insights and experience that prepare them for advanced studies and professional careers in science and engineering.

Computer Programming Lab

The Computer Programming Lab has been a leading center for programming practice and research techniques for writing and reasoning about programs, by recognizing and exploiting their underlying mathematcal structure. In addition, the programming lab provides a highly active research environment that includes regular seminars and workshops. However, all the terminals are equipped with C, C++, JAVA, JAVAscript, python, Spice, VHDL and various industry-leading modeling and simulation software.

Network and Simulation Lab

The Network and Simulation Lab covers the broad area of computer networking, model simulation and distributed systems. The lab is equipped with highly configured work stations, interactive smart boards, networking equipment and high speed broadband connection. All the PCs are configured with required simulation software and data analytical tools

Electronics Lab

Our state-of-the-art advanced electronics lab is the bay of the latest digital test equipments which will prepare a student with cutting-edge knowledge that reflects the latest developments in electronics engineering. Through an optimal balance between theory and hands-on experience in lab courses, student will gain a solid foundation in modern electronics, will develop technical expertise in areas such as Basic Electrical & Measuring Instruments, ICs, microelectronics, power electronics and industrial systems.

Featured Equipments Available -
* Digital Storage Oscilloscopes
* Arbitrary Function Generators
* Power Electronics Trainer Boards
* Digital Trainer Boards * Digital IC Testers etc.

Multimedia Lab

The Multimedia Laboratory comprises of apposite setting of highly configured Linux windows, iMac, webcam, headphone, video capturing tools, sound systems, interactive-whiteboard, and high-speed broadband connection.

General Computer Lab

The general computer labs facilities complete with up to date technology, provide a pleasant environment for staff or students for learning, teaching, research and undertaking practical assignments. Each lab is equipped with the latest computers along with a variety of software and equipment peripherals. All the systems have internet facilities. In this lab computers are for general use of the students. The students can use these computers for preparing assignments, doing homework, browsing the internet, writing emails, etc. There is a printing facility available at this Lab.

Energy Conversion & Power System Lab

The energy conversion and power system lab facilitates the students familiar with the wide variety of machines, transformer and power system training modules. The lab helps the students to get vast knowledge and skills on DC and AC machines, tranformer, modern control engineering and the power system engineering courses. An industrial type Drives Control Trainer teaches students how to operate and troubleshoot a control system with an industrial DC Drives & AC Variable Frequency Drives.

Communication Engineering Lab

The activities in this lab are directed towards enabling future generation communications systems, involving network security, Wireless and Optical communication, Signal processing, Computer vision, Control of unmanned Robotics systems using image processing, computer vision and Automatic Speech Recognition.

Featured Equipments Available -
* Analog and Digital Communication System
* Optical Fiber Communication Trainers
* Microprocessor Trainer Kits
* Digital Signal Processing Kits
* Digital Telecommunication Kits
* Microwave and Antenna System Simulation

Renewable Energy Lab

The renewable energy laboratory of SSE is a new addition of the academic curriculum to meet the future demands of power and energy sector in the world. As the green, clean, and sustainable energy is the main concern of the future energy needs, the school has planned to offer this course for the graduating students of EEE department. This lab. is well equipped with modern amenities and renewable energy based hardware and software facilities.

Robotics and Automation Lab

The main theme underlying our research here is development of algorithms and planners for automatic synthesis of robotic motions and manipulation tasks. Within this broad framework, the research has focused on both model-based and sensor-based path planning, grasp planning and dexterous manipulation. Our lab is equipped with state of the art 6 dof Robotic Arm manipulators, turtlebot3, Mobile Robots, stereovision cameras, laser distance sensors, and relevant sensors and actuators

Extra Curricular & Co-Curricular Activities and Achievements

- Regular seminars and workshops on emerging fields of CSE/EEE/ETE
- Study Tour in different industries, power stations, IT and Telecom companies etc
- Extra-curricular and co-curricular activities from CIU Science and Engineering Club (iSEC)
- Organized GP Hangout Program
- Arranged career talk in association with industry partners
- Robotics Competitions Inter-University project showcasing
- Live in Field Experience Indoor & Outdoor Sports Competitions
- Hosted National High School and Inter School Programming Contest
- Research publications in high impact factor journal
- Best paper award in the prestigious International conferences
- Organizing NASA Space Challenge & university level Programming Contest
- Yearly organizing of CIU-Tech Carnival & Engineering Nights

Clubs & Activities

iSec (Independent Science and Engineering Club)

iSEC is the premier student club run by the students of School of Science and Engineering (SSE), CIU. It has been in existence since the beginning when Chittagong Independent University started its journey in Chittagong. iSEC operates with the objectives of promoting leadership experience, social and professional networking opportunities, and career preparation for the under- grade student of this school. iSEC achieves these objectives by organizing events for its members the students of SSE, that opens up opportunities to interact, engage and collaborate with current students, alumni and industry experts.

CIU Robotics Club

The mission of the CIU Robotics Club is to provide our students the opportunity to have first-hand exposure to this exciting field of engineering, regardless of major or year. We encourage students to develop innovative solutions to academic and real-world challenges as they learn the skills necessary to work in teams. This club actively and regularly organizes various trainings, workshops and competitions on Robotics, AI and Machine Learning. In addition, utilizing the state-of-the art equipment of CIU Robotics Lab, our robotics club is committed to promote STEM education through mentorship and volunteerism in local elementary, secondary, and higher secondary schools in and around chittagong.

IEEE CIU Student Branch

The IEEE Student Branch at Chittagong Independent University started its journey in February 2019. Since its inception, IEEE CIU Student Branch has been operating in accordance with the mission and vision of Institute of Electrical and Electronics Engineers (IEEE) – the professional home for the engineering and technology community worldwide. An IEEE Student Branch gives students a community of peers, and a connection to faculty and industry professionals who drive innovation in countless technical fields. As part of this global community, students of School of Science and Engineering at CIU have been actively involved in various activities - special projects, social and technical meetings, seminars, workshops, conferences, outreach programs, etc.

CIU Programming Club

Unleash your coding potential with the CIU Programming Club (CIUPC)! Dive into a dynamic community where creativity meets technology. Whether you're passionate about building software, solving complex problems, or simply exploring the endless possibilities of programming, our club offers Programming boot camps and training sessions based on different programming languages and problem solving skills. Members are engaged in hands-on coding sessions, collaborate on exciting projects, and participate in coding competitions to put your skills to the test. With access to industry mentors, guest speakers, and networking opportunities, students gain valuable insights and connections to fuel your future career in technology. Join us and embark on a journey of innovation, learning, and endless opportunities in the world of programming!

Award & Achievements

Dean's Award: Celebrating Top Academic Achievements

At the School of Science and Engineering (SSE) at Chittagong Independent University (CIU), we honor outstanding academic performance with the prestigious Dean's Award. This accolade is given each semester to the students who achieve exceptional academic results and demonstrate an unwavering dedication to their studies.

Recipients of the Dean's Award are recognized for their exemplary pursuit of knowledge and their ability to maintain high academic stac ours work but also serve as inspirations to their peers, showcasing the value of hard work and commitment. Their achievements contribute significantly to the intellectual vibrancy of SSE and CIU.

We commend all Dean's Award recipients for their remarkable accomplishments and their steadfast commitment to academic excellence.

Performance Award: Honoring Extracurricular Excellence

We proudly acknowledge students who excel beyond academics with the Performance Award. This award celebrates outstanding contributions and leadership in extracurricular activities such as sports, music & cultural activities, school and departmental contribution participating different national and international contests etc.

Students honored with the Performance Award demonstrate exceptional talent, dedication, and passion in their chosen fields, significantly enriching campus life. Their achievements inspire peers and foster a sense of community within SSE and CIU. These well embody the balance between academic and rounded individuals extracurricular success.

We extend our congratulations to all Performance Award recipients for their remarkable contributions and their dedication to excellence outside the classroom.

Internship: Integrating Classroom Learning with Practical Experience

School of Science and Engineering (SSE) of Chittagong Independent University (CIU) emphasizes the importance of internships in providing practical, hands on experience. Our internship program bridges classroom learning with real world applications, preparing students for successful careers.

Through collaborations with industry leaders, government agencies, and research institutions, SSE ensures meaningful internship placements for students in various fields, including Electrical and Electronic Engineering (EEE) and Computer Science and Engineering (CSE). Faculty members utilize their extensive networks to secure opportunities that align with students' interests and career goals.

These internships allow students to apply theoretical knowledge to real world challenges, gaining invaluable insights and professional connections. SSE supports students throughout the internship process, ensuring they maximize their learning and are well prepared for the job market.

Job Placement: Guiding Students to Career Success

we are committed to helping students transition from academia to successful careers. Our job placement assistance program connects graduates with rewarding employment opportunities that match their skills and aspirations.

Through strategic partnerships with industry leaders and alumni networks, SSE facilitates job placements across various sectors, including engineering, technology, and research. Career advisors provide personalized support, helping students with resume building, interview preparation, and job search strategies.

SSE graduates are highly valued by employers for their strong academic backgrounds and practical experiences. Our commitment extends beyond graduation, supporting alumni in their professional growth and career success.

Career Counseling: Empowering Students for Future Success

Navigating career choices can be challenging, and the School of Science and Engineering (SSE) of Chittagong Independent University (CIU) offers robust career counseling services to guide students. Our counselor's help students explore their interests, assess their strengths, and develop strategic plans for their academic and professional futures.

Individual counseling sessions, workshops, and networking events provide valuable insights into various industries and career paths. These initiatives help students gain practical knowledge, build professional networks, and acquire essential skills for today's job market.
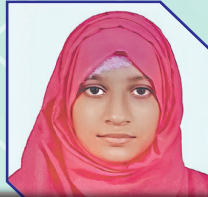
SSE is dedicated to helping students make informed career decisions, pursue their passions, and achieve their goals. Our career counseling services ensure students are well prepared for the complexities of the modern workforce and equipped for successful career journeys.

ALUMNI AND PLACEMENT

Ahmad Sabbir Chowdhury
CSE
Master's in Computer Science
at Acadia University, Canada.

Nuzat Siddiqua
CSE
Master's in Computer Science
University of Missouri Kansas City's.

Shadman Saif Anonno
CSE
Software Engineer
Arena Phone Bd Ltd.

Adiba Hossain Dia
EEE
Engineering Management at
Hofstra University, New York, USA.

Gopa Banik
CSE
Master's degree in Information Technology
at Griffith University in Australia.

Pritu Ghosh
EEE
M.Sc in EEE
TU Darmstadt, Germany

SK. M. Jahangir Kabir
EEE
Assistant Director
Office of the Prime Minister
Govt. of The Peoples Republic of Bangladesh

Saroar Jahan Shuva
CSE
M.Sc in Management Information System
Lamar University Texas, USA

Asif Siddique
EEE
Fellow at Tech for Bangladesh

Muhaimunul Islam
CSE
3D Game Artist
Sleepy Penguin Studios

Amit Ghosh
CSE
Executive (ERP/BIMS)
Lalteer Seeds Limited

Falguni Sengupta
CSE
Director
Homexpress Software