

Output 3: R&D and Technology Entrepreneurship Strengthened

Aims to increase value addition of CSE/IT degree programs to IT/ITES industry through fostering innovations and increasing technology enabled entrepreneurs. The major activities are -

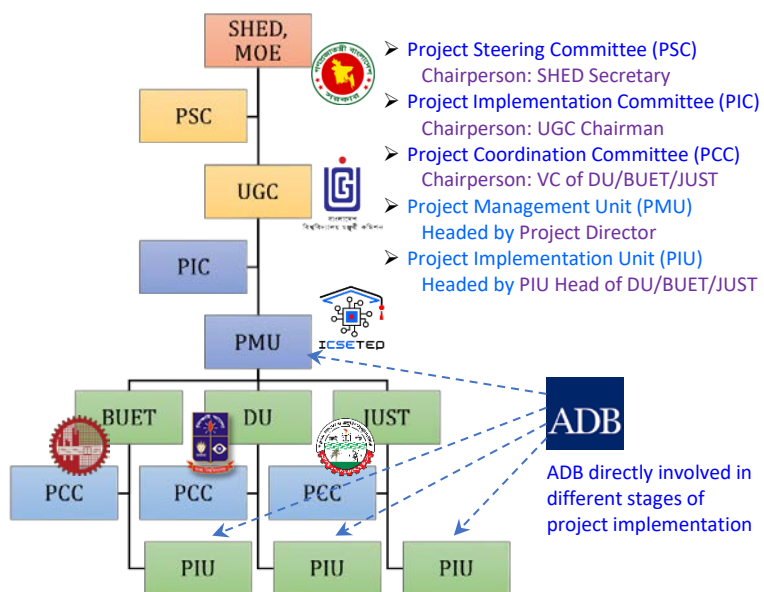
- (i) Competitive R&D grants scheme.
The Project will award RDG Sub-Projects in different rounds through open call for proposals under the following areas:
Window 1 (Industry R&D collaboration) – 50%
Window 2 (Interdisciplinary R&D) – 25%
Window 3 (Cutting edge IT research) – 15%
Window 4 (IT solutions for addressing disability issues) – 10%
- (ii) Startup or incubation support services.
- (iii) Postgraduate stipend program.
- (iv) Software and technology competitions.

Output 4: Project Management Capacity Increased

The project will provide necessary facility and human resources to ensure efficient and effective project management through the PMU and three PIUs to maximize the value addition of the project. The major activities are –

- Stipend, research grant, internship program implementation and monitoring system developed
- Train department staff on modern practices in higher education management.
- Establishing student service and industry relations centers and carrying out the activities.

ICSETEP Management Structure:



Time Line of Major ICSETEP Events:

- 02/05/2023 ECNEC Approval of ICSETEP
- 11/06/2023 SHED Govt. Order of ICSETEP
- 09/11/2023 GO for Project Director (PD) Appointment
- 19/11/2023 PD Joining
- 27/11/2023 Website (www.icsetep.ugc.gov.bd) Lunch
- 28/11/2023 Loan Agreement between ADB and ERD
- 28/11/2023 Agreement between ADB and UGC, DU, BUET and JUST
- 22/12/2023 ADB Loan became Effective
- 06/02/2024 1st PIC Meeting
- 18/02/2024 Awareness Workshop and Launching Ceremony



Photo: ADB Loan Agreement



ICSETEP is a unique national project, first time in Bangladesh, to construct new CSE academic buildings, develop modern labs, and update curriculums in BUET, DU and JUST. Research, innovations, and some other components are open for all the universities to enhance CSE/ICT tertiary education in Bangladesh. I hope ICSETEP will be a milestone for our beloved country to its prosperity in different sectors. I sincerely thank UGC and SHED, MoE authorities for selecting me for the Project Director (PD), ICSETEP as deputation from my KUET Professor (CSE) position. I believe proper utilization of the ICSETEP grant (including 100 Million USD ADB loan) is the key issue to reach the goal, and I will be sincere on this issue. In this regard, supports and suggestions from SHED, UGC and PIUs (of BUET, DU & JUST) are also equally necessary. Our combined efforts might make ICSETEP most fruitful through smooth operation and finish it timely. Notification of project activities will be available in ICSETEP website.

Prof. Dr. Muhammad Aminul Haque Akhand
Project Directory, ICSETEP

(on Deputation from Dept. of CSE, KUET)
www.icsetep.ugc.gov.bd || www.kuet.ac.bd/cse/akhand/



IMPROVING COMPUTER AND SOFTWARE ENGINEERING TERTIARY EDUCATION PROJECT

The Improving Computer and Software Engineering Tertiary Education Project (ICSETEP) is in its operational stage. ICSETEP is a unique project in Bangladesh to improve tertiary level CSE/IT education to meet the challenges of 4IR and to lead of the country in IT sectors. Secondary and Higher Education Division (SHED) of the Ministry of Education (MoE) is the project Executing Agency (EA) and University Grants Commission (UGC) of Bangladesh is the main Implementing Agency of ICSETEP. University of Dhaka (DU), Bangladesh University of Engineering and Technology (BUET), and Jashore University of Science and Technology (JUST) are the Co-Implementing Agencies and major stakeholders of ICSETEP.

The Project Management Unit (PMU) under UGC is responsible for project management, coordinating the implementation, planning, monitoring and reporting of whole ICSETEP. A Project Implementation Unit (PIU) in each of DU, BUET and JUST will carry out the project activities: new academic building constructions, modern lab developments, and curriculum updates of CSE and modern ICT fields with PMU support. The PMU is responsible for implementation of research, innovations, and some other components for all the universities to enhance CSE/ICT tertiary education in Bangladesh. The implementation period of ICSETEP is from March 2023 to June 2028 (as per DPP).



ICSETEP Budget:

Total Project Cost:	Tk. 121,980.00 Lac
ADB LOAN (USD 100 Million):	Tk. 107,000.00 Lac (87.72%)
GoB GRANT Amount:	Tk. 14,980.00 Lac (12.28%)
Budget Distribution:	
▪ UGC (PMU)	Tk. 30,383.84 Lac (24.91%)
▪ DU	Tk. 25,196.23 Lac (20.66%)
▪ BUET	Tk. 35,710.40 Lac (29.27%)
▪ JUST	Tk. 30,689.53 Lac (25.16%)

Overall Objective:

Improve socio-economic condition of Bangladesh by establishing a more relevant Higher Education in CSE/IT Programs in terms of quality, efficiency & equity through increasing job ready graduates & cutting-edge research capacity to meet the challenges of Fourth Industrial Revolution (4IR) and develop technology entrepreneur-ships to lead of the country in IT/ITES sectors.

Specific Objectives and Targets:

- ❖ Graduates from industry relevant degree programs increased.
 - 2,200 undergraduates and graduate (25% women).
 - 40% of graduates (both men and women) are employed.
- ❖ Industry demand course offering by universities and increase enrollment in CSE/IT subjects.
 - Annual enrolment increased to 1,270.
 - New and updated curricula with outcome-based education and blended learning.
 - Introduce open courseware.
- ❖ Increase the enrollment of female students in the public universities and the retention in CSE/IT subjects by offering stipend/scholarship at postgraduate level.
 - 550 female graduation in CSE/IT.
 - 370 female received undergraduate scholarship.
 - 540 female stipends for postgraduate study.
- ❖ Quality assurance of CSE / IT degree to create quality graduate.
 - Obtained accreditation aligned with international standards.
- ❖ Faculty strengthening for CSE/IT departments.
 - Faculty members increased with 35% PhD and 20% women in DU, BUET and JUST.
 - Faculty members with 30% women trained in modern pedagogic approaches.
 - Faculty members obtained certificate in new technology areas through reputable online programs.
- ❖ Increasing industry relevance of CSE/IT education by providing internship and technology competition opportunities.
 - 80% of graduate completed internships or industry-collaboration capstone projects in DU, BUET and JUST.

- 300 students from other universities completed career counseling and internship programs.
- Professional certification program in DU, BUET and JUST increased to 5,000 per year.
- Software and technology competition events open to all university students.
- ❖ Strengthening R&D capacity and increasing industry relevance in R&D.
 - At least 10 university–industry R&D collaboration projects, 6 interdisciplinary R&D projects including COVID-19 responses, and 4 R&D projects for disability solutions implemented.
 - At least 5 collaboration in R&D with international universities supported.
 - Digital library and BdREN strengthened.
- ❖ Entrepreneurship development and startup supports for ITES products by the graduates.
 - Facilities startup companies established in three universities (DU, BUET and JUST);
 - Three universities supported at least 55 startup groups;
 - At least 8 startup companies legally registered and started generating revenues.
- ❖ At least 2,000 students, faculty members, and IT professionals (30% women and 30% from other universities) reported enhanced knowledge and skills in technology entrepreneurship. Stronger student services for job placement.
 - Student services and career guidance center established and operational in three universities.
 - At least 3 annual job fair events open to all CSE/IT students coordinated by the three universities.

Outcomes: Qualified workforces for IT industry increased, *i.e.*, tertiary level CSE/IT education improved to industry demand

Outputs: The key project outputs are -

1. Modern learning, research and startup facilities established.
2. Quality and industry-relevance of CSE/IT programs enhanced.
3. R&D and technology entrepreneurship strengthened.
4. Project management capacity increased.

Output 1: Modern Learning, Research and Startup Facilities Established

Develop physical facilities, such as classrooms, laboratories, research and development (R&D), industry collaboration and startup or incubation space, and auxiliary facilities. A new fully furnished and purpose-fit buildings will be constructed at **BUET (17-story building)**, **DU (13-story building)** and **JUST (10-story building)**. The buildings will also include women friendly facilities such as sanitation facilities, female students' study areas, female staff lounges as well as security and safety features such as access control and video surveillance system.

Output 2: Quality and Industry-Relevance of CSE/IT Programs Enhanced

- (i) Developing new or upgrading existing degree programs. Incorporating the latest technology and global academic and industry practices. Outcome-based education will be introduced.

BUET: Specialization to be introduced at undergraduate level covering - Algorithms and Theory, Networking and Security, Database and Data Mining, Machine Learning and Artificial Intelligence, Software Engineering and Programming Languages, High-Performance Parallel and Distributed Computing, Mobile and Ubiquitous Computing, Computer Engineering. The number of annual intakes will be increased to B.Sc. Engg. (195), M.Sc. Engg, M. Engg & Ph.D. (280).

DU: Undergraduate curriculum to be updated in consultation with industry, incorporating IoT, augmented and virtual reality, big data, data analytics, software analytics, cloud computing and artificial intelligence. The number of annual intakes will be increased to BSSE (180), Master & Ph.D. (175), PGDIT (50).

JUST: B.Sc. Engg. in CSE, Software Engineering, Information Technology (120 intakes). M.Sc. Engg. in CSE, M. Engg. in CSE, Master in Computer Application, Master in Information Technology, Master in CSE with new programs for business background students (120 intakes). Ph.D. (8 intakes). Diploma in Computer Application (1y) and Certificate in Computer Application (6 month) (60 intakes).
- (ii) Introduction of Online Open Courseware. Develop open courseware for CSE/IT programs and make them accessible online through BdREN academic network.
- (iii) Strengthening UGC Digital Library. Adding relevant e-journals and databases, improving user access for institutions, and necessary capacity development.
- (iv) International accreditation. The new and updated programs will pursue internationally recognized accreditation to ensure continuous improvement in quality, aligned with international standards.
- (v) Increase in faculty members. With increased number of students, faculty members also be increased in BUET (119), DU (84) and JUST (37).
- (vi) Long-term training for faculty members.
- (vii) Short-term training for faculty members and support staff.
- (viii) Upgrading and expanding training programs for IT professionals.
- (ix) Strengthening student and industry relations services.
- (x) Mandatory industry attachment programs for undergraduates.
- (xi) Undergraduate scholarships/stipends to attract more female students and poor students.
- (xii) Support for female employment promotion.