Information Technology Institute

Architecture, Engineering and Construction Informatics (AEC Informatics)

People Develop Countries… We Develop P.E.O.P.L.E.

Program Admission Arrangement

Who May Apply?

- **Graduates of:**
  - **Architectural Engineers**
  - **Civil/Structural Engineers**
  - **Mechanical Engineers**
  - **Electrical Engineers**
  - **Plumbing Engineers**

All University Graduates with prerequisites of Bachelor's degree in Engineering discipline related to AEC Industry (Architectural, Civil, Electrical, and Mechanical). Applicants must have a first degree from a recognized university or institution of higher education.

Prerequisites

These topics will be discussed with you in the interviews (Resources applicants can visit or study before interview)

- **Applicants must have basic knowledge of computer programming. and using AEC-related CAD/BIM authoring tools.**
- **Applicants must have proven academic/professional experience in the field of CAD/BIM for AEC Industry.**

Selection Process

- **Phase 1: IQ and Problem-Solving exam | English exam**
- **Phase 2: Technical Exam**
  Computer-based technical exam in the field of your interest
- **Phase 3: Technical Interview**
  Those applicants would be discussing with the interviewing panel their pre-work -"Before You Apply"- in a one-to-one interview
- **Phase 4: Interpersonal Skills Interview**
  Those how pass phase 3 will be promoted to this interview

Delivery Approach

- 50% face to face Learning| 50 % Online (prfererablly to be 100% offline in the upcoming intake, if ITI room capacity permits).
- Common Hardware
- Common Software

Students' Deliverables

- Each student must deliver at lest ONE **freelancing** job and optionally, a professional **certficate** based on his track.

AEC Informatics Tracks

1 Programs Offered

☑ **Professional Training Program:**
- AEC Informatics Specialist (formerly CEI Specialist) – 9 Month Diploma

☑ **Intensive Code Camps:**
- BIM Automation Developer
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☑ **Undergrads Summer Camps**
☑ **Online Services (Technical Awareness Webinars**)

2 Industry/Academy Stakeholders

- Autodesk
- Trimble
- Bentley
- Esri
- Zamil EMS
- Elibre
- ASI
- AGECS
- Orascom Construction
- Orascom Development
- Naga Architects
- …

3 Targeted Outcome

- Employability
- Awareness

4 Certifications

- CAD/BIM Field: Variety of available Autodesk Certified Professional certificates.
- SWD Field: Variety of certified professional certificates for the studied tools.

- NOTE: Certificates are not a program KPI, it is just a secondary measure (not required for employability).

5 Graduates Job Profiles

Job Profile 01 **Engineering Informatics Specialist** **(9-Month Diploma – PTP)** Analyze requirements, define solution architecture and develop "Scientific and Engineering Software" solutions to meet the business needs of the Architecture, Engineering and Construction (AEC) Industry such as CAE, CAD, BIM, CIM, GIS and related systems.

Job Profile 02 **BIM Automation Developer** **(3-Month Diploma – Intensive Training)** Automate the processes within the BIM project lifecycle by creating tailored solutions and customized Add-ins that enable collaboration and interoperability among heterogenous CAE/CAD/BIM tools. In addition, develop BIM-based software solutions that tackle real-world problems as they arise in the Architecture, Engineering and Construction (AEC) industry.

AEC Informatics Tracks

Program Content Structure

950 Hours

Fundamental courses

- Operating Systems Fundamentals
- Computer Networks Fundamentals
- Database Fundamentals
- Computer Programming I – Programming Fundamentals (with C#)
- Computer Programming II – Object-Oriented Programming (with C#)
- Computer Programming III – Advanced Topics (with C#)
- Data Structures, Algorithms, and Complexity (with C#)
- Desktop Application Development (with C#)
- Web Development I – Front-End Development
- Web Development II – Back-End Development
- Software Testing and QA Fundamentals

Life Skills Courses

- Communication Essentials for Professionals
- High Impact Presentations
- Job Seeking Skills
- Progressive Teamwork (Workshop)
- Professional Demeanor (Workshop)
- Best Practices For Remote Working (Workshop)

Core Courses

- Scientific Programming with C/C++
- Scientific Programming with Python
- Scientific Computing I - Scientific Software Development
- Scientific Computing II - Numerical Tools & Algorithms
- Scientific Computing III - High-Performance Computing [Elective Workshop]
- Selected Topics in Engineering Informatics
- Computer Graphics I - Mathematics Foundation
- Computer Graphics II - Programming with OpenGL
- Computer Graphics III - Programming with WebGL
- Building Information Modeling I – Fundamentals
- Building Information Modeling II - Design Studio
- Building Information Modeling III - Development Studio
- Geographic Information Systems I – Fundamentals
- Geographic Information Systems II – Geodatabases
- Geographic Information Systems III - Development
- Artificial Intelligence Fundamentals
- Internet of Things Fundamentals [Elective Workshop}