

HIGHER NITEC IN OPERATIONAL & INFORMATION TECHNOLOGY (3 YEARS)

CERTIFICATION

Credits required for certification:

| | |
|---------------------------------|-------------|
| Foundation Modules | : 24 |
| Core Modules | : 6 |
| Specialisation Modules | : 39 |
| Life Skills Modules | : 10 |
| Cross Disciplinary Core Modules | : 9 |
| Electives | : 8 |
| Total | : 96 |

COURSE STRUCTURE

| Module Title | Credits |
|---|---------|
| FOUNDATION MODULES | |
| Networking Fundamentals | 3 |
| Coding for AI | 3 |
| Operating System Essentials | 3 |
| Digital Media Technologies | 3 |
| Fundamentals of Data | 3 |
| Introduction to UI/UX | 3 |
| Web Development Essentials | 3 |
| Cybersecurity Fundamentals | 3 |
| CORE MODULES | |
| Software Development Practices | 3 |
| Programming Essentials | 3 |
| SPECIALISATION MODULES | |
| AI Ethics & Bias | 3 |
| Mobile Application Programming | 3 |
| Computer Vision Essentials | 3 |
| Natural Language Processing Essentials | 3 |
| Data for AI Essentials | 3 |
| Industry Attachment 1 | 4 |
| Computer Vision Applications | 3 |
| Service Robot Applications | 3 |
| Artificial Intelligence of Things (AIoT) Applications | 3 |
| AI Project Development | 3 |
| Industry Attachment 2 | 8 |
| ELECTIVES (GENERAL) AND LIFE SKILLS MODULES | |
| For details, click here | |

Note: The offer of electives is subject to the training schedule of respective ITE Colleges. Students are advised to check with their Class Advisors on the availability of the elective modules they intend to pursue.

MODULE OBJECTIVES

Foundation Modules

Networking Fundamentals

On completion of the module, students should be able to set up, configure, set up and troubleshoot wired and wireless network system for small office environment. They should be able to provide network support and configure devices such as switches and wireless access points.

Coding for AI

On completion of the modules, students should be able to experience the concepts of AI through no to low coding methods. Students will create basic program logic and AI model through fun and engaging project.

Operating System Essentials

On completion of the module, students should be able to install and configure operating system (OS) and application software on end user computing devices. In addition, they should also be able to perform OS maintenance and troubleshooting.

Digital Media Technologies

On completion of the module, students should be able to apply their knowledge and skills in processing appropriate digital media formats for various platforms delivery.

Fundamentals of Data

On completion of the module, students should be able to import data from external sources, perform basic data manipulation and present simple visualisation of the data.

Introduction to UI/UX

On completion of the module, students should be able to apply User Interface (UI) and User Experience (UX) development process to produce low-fidelity and high-fidelity wireframes and prototypes for websites and mobile apps.

Web Development Essentials

On completion of the module, students should be able to develop web pages using HTML and CSS.

Cybersecurity Fundamentals

On completion of the module, students should be able to apply the knowledge and essentials skills in all security domains in the cyber world - information security, systems security, network security, mobile security, physical security, ethics and laws, related technologies, defence and mitigation techniques use in protecting.

Core Modules

Software Development Practices

On completion of the module, students should be able to apply their knowledge and skills in software development methods on recommended solutions.

Programming Essentials

On completion of the module, students should be able to apply fundamental programming concepts and computational thinking for basic programs.

Specialisation Modules

AI Ethics & Bias

On completion of the module, students should be able to apply their knowledge and skills in AI ethics, bias, security, intellectual properties, basic data science and industry requirements on recommended AI solutions.

Mobile Application Programming

On completion of the module, students should be able to configure software development environment, build user interface, integrate functions for interactivity and data processing, as well as publish application package onto mobile devices.

Computer Vision Essentials

On completion of the module, students should be able to apply their knowledge and skills in computer vision (CV). They will be able to acquire and process digital images by applying computer vision techniques.

Natural Language Processing Essentials

On completion of the module, students should be able to apply their knowledge and skills in natural language processing (NLP). They will be able to read, decipher and make sense of the human languages using NLP model.

Data for AI Essentials

On completion of the module, students should be able to apply their skills and knowledge to process and manipulate data. They should also be able to apply machine learning techniques to make predictions and evaluate the accuracy of AI models.

Industry Attachment 1

On completion of the module, students should be able to integrate and apply the skills and knowledge acquired at ITE College, and further develop competencies at the workplace.

Computer Vision Applications

On completion of the module, students should be able to apply their knowledge and skills in CV to analyse CV applications requirement, prepare CV application hardware and software, as well as to perform AI project such as drones and autonomous robot car.

Service Robot Applications

On completion of the module, students should be able to apply their knowledge and skills in NLP to analyse NLP applications requirement, prepare NLP application hardware and software, as well as to perform AI service robots' applications.

Artificial Intelligence of Things (AIoT) Applications

On completion of the module, students should be able to apply their knowledge and skills in data to analyse data applications requirement, prepare data application hardware and software, as well as to perform AIoT applications.

AI Project Development

On completion of the module, students should be able to address a business problem and provide AI solution to resolve the issue, by leveraging on the knowledge and skills gained throughout the course.

Industry Attachment 2

On completion of the module, students should be able to integrate and apply the skills and knowledge acquired at ITE College, and further develop competencies at the workplace.

Electives (General) and Life Skills Modules

For details, click [here](#).