



Section XIX

SCIENCE AND TECHNOLOGY PROGRAMS

In various forms, science and technology have played an important role in the development of all civilizations; this was particularly the case the past century, and science and technology promise to be of ever-increasing importance for our lives in the present century.

The programs offered by the College of Science and Technology not only aim to provide the students with a solid knowledge-base about selected disciplines. As should be the case with any good institute of higher learning, more advanced-level courses, in particular, are of sufficient depth to contribute to the students' intellectual development by training them to think clearly and creatively in a focused manner. This is to give them confidence in tackling and solving problems; including the communication of their results to others.

The mission of the College of Science and Technology is to produce graduates who have a good grounding in science and technology; and who thus have both the knowledge and the ability to use it to contribute to Cambodia's future socio-economic development. To achieve this goal, we offer the following undergraduate programs:

- Computer Science (AS, BS)
- Electronics and Telecommunications (BS)
- Information Technology (BS)

Programs may be offered in either the International or the Khmer track according to demand, with appropriate changes for level of the English language courses (see Section V.3).

1. COMPUTER SCIENCE

The undergraduate programs are designed by the Department of Computer Science to combine theory and practice to teach students about computer usage, programming and maintenance. The Bachelor's program provides further understanding of computer systems and networks, security, database systems, graphics, programming languages and software engineering.

i. Associate's Degree

Major Courses (3 credits each)

- ITE003K (= ITE102): Introduction to Computer Programming C++
- ITE004K (= ITE103): Introduction to the Internet
- ITE005K (= ITE106): Computer Maintenance and Repairing
- ITE006K (= ITE201): Python Programming
- ITE007K (= ITE202): Java Standard Edition (J2SE)
- ITE008K (= ITE203): Database Concepts
- ITE009K (= ITE204): Java Enterprise Edition (J2EE)
- ITE010K (= ITE205): Multimedia and Graphic Design
- ITE011K (= ITE206): Web Programming Java Script
- ITE012K (= ITE207): Data Communications and Networking
- ITE013K (= ITE211): VBA Programming I
- ITE014K (= ITE212): Creating Animations
- ITE015K (= ITE213): VBA Programming II
- ITE016K (= ITE214): Fundamentals of Computer Networks

General Education (3 credits each; *, compulsory Foundation Year courses)

- ENG001K: Foundation English I
- ENG002K: Foundation English II
- HIS101K: Cambodian History
- ITE101K: Fundamentals of Computing
- KHM140K: Khmer Culture
- LAW101K: Introduction to Law
- MTH120K: Introduction to Statistics
- POL101K: Introduction to Political Sciences

Other Electives (3 credits each)

- PHE001K: Personal Health and Wellness
- COM101K: Interpersonal Communication
- ITE002K: Office Applications
- BUS005K: Foundations of Teamwork and Leadership

ii. Bachelor's Degree

Major courses (3 credits each)

- ITE102: Introduction to Computer Programming C++
- ITE103: Introduction to the Internet
- ITE105: Computer Architecture
- ITE106: Computer Maintenance and Repairing
- ITE201: Python Programming
- ITE202: Java Standard Edition (J2SE)
- ITE203: Database Concepts
- ITE204: Java Enterprise Edition (J2EE)

ITE205: Multimedia and Graphic Design
ITE207: Data Communications and Networking
ITE208: UI/UX Design
ITE209: Dart Programming
ITE210: Digital Media Technology
ITE301: Database Administration and Management
ITE302: Cisco Networking I
ITE303: Web Programming PHP and MySQL
ITE304: Android App Development
ITE305: System Analysis and Design
ITE306: Cisco Networking II
ITE307: Software Project Management
ITE308: DevOps Engineering
ITE310: AI/ML Technology
ITE311: Flutter App Development
ITE401: Dynamic Web Design
ITE403: E-Commerce Technology
ITE404: Data Warehousing and Data Mining
ITE405: Windows System Administration
ITE406: Linux/Unix System Administration
ITE407: Routing and Switching
ITE408: Cyber Security

General Education (3 credits each; *, compulsory Foundation Year courses)

COM101: Interpersonal Communication
ENG101: College English*
ENG102: English Composition*
HIS101: Cambodian History*
INT104: Geopolitics and Globalisation
ITE101: Fundamentals of Computing*
KHM140: Khmer Culture*
LAW101: Introduction to Law*
MTH120: Introduction to Statistics*
PHL104: Critical Reasoning
PHL105: Moral Philosophy
POL101: Introduction to Political Science*
PSY101: Introduction to Psychology
RES201: Introduction to Research
RES301: Research Methodology
WMN201: Perspectives on Women in Society

Other Electives (3 credits each)

BUS304: Leadership Skills
ENG107: The Written Language
ENG122: Further English for Non-Majors
ENG219: Business Communication
ORG201: Organizational Behavior

2. ELECTRONICS AND TELECOMMUNICATIONS

This Bachelor's degree programme is designed to give graduates an understanding of the theory of electronics and core networking, and how this is being used to develop the rapidly-evolving systems of modern telecommunications.

***Major courses* (3 credits each)**

- ETC201: Introduction to Telecommunications
- ETC301: Electronics Theory
- ETC302 (= ITE302): Huawei HCIA I
- ETC303: Electronic Circuit Design
- ETC304: Digital Logic Design
- ETC305: Antenna Theory and Design
- ETC306 (= ITE306): Huawei HCIA II
- ETC401: Microwave Engineering
- ETC402: Mobile and Wireless Communication Systems
- ETC403: Optical Fiber Systems and Networks
- ETC404: Telecommunications and Network Security
- ETC405: Satellite Communications

- ITE102: Introduction to Computer Programming C++
- ITE103: Introduction to the Internet
- ITE105: Computer Architecture
- ITE106: Computer Maintenance and Repairing
- ITE202: Java Standard Edition (J2SE)
- ITE203: Database Concepts
- ITE204: Java Enterprise Edition (J2EE)
- ITE205: Multimedia and Graphic Design
- ITE207: Data Communications and Networking
- ITE208: UI/UX Design
- ITE209: Dart Programming
- ITE210: Digital Media Technology
- ITE307: Project Management
- ITE308: DevOps Engineering
- ITE310: AI/ML Technology
- ITE311: Flutter App Development
- ITE404: Data Warehousing and Data Mining
- ITE406: Linux/Unix System Administration

***General Education* (3 credits each; *, compulsory Foundation Year courses)**

- COM101: Interpersonal Communication
- ENG101: College English*
- ENG102: English Composition*
- HIS101: Cambodian History*
- INT104: Geopolitics and Globalisation
- ITE101: Fundamentals of Computing*
- KHM140: Khmer Culture*
- LAW101: Introduction to Law*
- MTH120: Introduction to Statistics*
- PHL104: Critical Reasoning

PHL105: Moral Philosophy
POL101: Introduction to Political Science*
PSY101: Introduction to Psychology
RES201: Introduction to Research
RES301: Research Methodology
WMN201: Perspectives on Women in Society

Other Electives (3 credits each)

BUS304: Leadership Skills
ENG107: The Written Language
ENG122: Further English for Non-Majors
ENG219: Business Communication
ORG201: Organizational Behavior

3. INFORMATION TECHNOLOGY

Information Technology is based on the systematic study of algorithmic processes – their theory, analysis, design, implementation, and application; and applying this knowledge to solve problems – creating the right model and then devising an appropriate computer manipulation for a solution. Thus, even though it is a relatively new field, Information Technology touches virtually every area of human endeavor.

This Bachelor's degree programme is both problem-solving and applications oriented. Graduates will find ready employment in almost any area of computer use: managing networks, developing software solutions, or designing systems for organizations, web development, and mobile app development.

Major courses (3 credits each)

ITE102: Introduction to Computer Programming C++
ITE103: Introduction to the Internet
ITE105: Computer Architecture
ITE106: Computer Maintenance and Repairing
ITE201: Python Programming
ITE202: Java Standard Edition (J2SE)
ITE203: Database Concepts
ITE204: Java Enterprise Edition (J2EE)
ITE205: Multimedia and Graphic Design
ITE206: Web Programming Java Script
ITE208: UI/UX Design
ITE209: Dart Programming
ITE210: Digital Media Technology
ITE301: Database Administration and Management
ITE302: Cisco Networking I
ITE303: Web Programming PHP and MySQL
ITE304: Android App Development
ITE305: System Analysis and Design
ITE307: Software Project Management
ITE308: DevOps Engineering
ITE309: iOS App Development
ITE311: Flutter App Development
ITE401: Dynamic Web Design
ITE402: Spring Framework

ITE403: E-Commerce Technology
ITE404: Big Data and Cloud Computing
ITE409: .NET Programming
ITE410: OOP Programming
ITE411: Professional Database (Oracle)
ITE412: Blockchain and FinTech Technology

| ***General Education*** (3 credits each; *, compulsory Foundation Year courses)

COM101: Interpersonal Communication
ENG101: College English*
ENG102: English Composition*
HIS101: Cambodian History*
INT104: Geopolitics and Globalisation
ITE101: Fundamentals of Computing*
KHM140: Khmer Culture*
LAW101: Introduction to Law*
MTH120: Introduction to Statistics*
PHL104: Critical Reasoning
PHL105: Moral Philosophy
POL101: Introduction to Political Science*
PSY101: Introduction to Psychology
RES201: Introduction to Research
RES301: Research Methodology
WMN201: Perspectives on Women in Society

Other Electives (3 credits each)

BUS304: Leadership Skills
ENG107: The Written Language
ENG122: Further English for Non-Majors
ENG219: Business Communication
ORG201: Organizational Behavior

