



ICT-U CAMEROON, P.O. Box 526 Yaounde, Cameroon

Schools and Programs

DETAILED ICT-U PROGRAMS AND CORRESPONDING CREDIT HOURS

Important note on English as a Second Language (ESL) and International Computer Driving License (ICDL):

English as a Second Language (ESL): The courses detailed in this document are all taught in English. However, students with French or Spanish as their first language will be offered the opportunity to go through a one-semester intensive English as a Second Language (ESL) program to prepare the students for our ICT University courses. This one semester program DOES NOT count towards the student's degree. The details of the ESL program follow the explanation of the ICDL.

International Computer Driving License (ICDL):

The ICDL demonstrates a student's ability to use a computer and its most popular computer applications. Candidates have to pass tests in the following seven modules as the first three (3) credit hour course at ICT-U. The ICDL program is for anyone who wishes to become fully competent in the use of a computer and common applications. Each ICDL module provides a practical program of up-to-date skills and knowledge areas which are validated by a test.

For students to achieve a solid base of skills and knowledge, therefore attaining a minimum level of digital literacy, it is recommended that candidates complete and attain certification in a minimum of four ICDL modules. Students are required to take training on each module prior to taking the test. Each module is tested separately with each test lasting no longer than 45 minutes. For a recommended level of ICT competence to be achieved, a certification of a minimum of seven ICDL modules is appropriate. In order to achieve the ICDL certification, individuals must pass a test for each of the seven modules.

ALL ICT-U students MUST take this course which counts for three (3) credit hours towards their degree. This course will be open to members of the public who just wish to do this as their part of their professional development, without engaging in any of ICT-U's degree programs.



- Module 1 - Concepts of ICT
- Module 2 - Using the Computer and Managing Files
- Module 3 - Word Processing
- Module 4 - Spreadsheets
- Module 5 - Using Databases
- Module 6 - Presentation
- Module 7 - Web Browsing and Communication
- Module 8 - 2D Computer Aided Design
- Module 9 - Image Editing
- Module 10 - Web Editing
- Module 11 - Health Information Systems Usage
- Module 12 - IT Security
- Module 13 - Project Planning

English as a Second Language (ESL) Detailed Program: Organized in five modules

English as a Second Language Module 1

Conversation Skills Are Developed

• Reading and writing are important skills, but we begin the ESL program with emphasis on listening and speaking. The main focus of the program is developing one's ability to use English in everyday personal and workplace situations.

The student will receive a student assignment booklet and CD which are designed to help you learn to speak English. The student needs to follow the directions in the student assignment booklet to understand how and when to use each component of the program.

English as a Second Language Module 2

Literacy in the Workplace

The student will learn the essentials of basic English necessary to survive on the job.

- Completing simple forms and asking for directions
- Identifying places at work
- Following simple instructions for using common machines at work
- Greeting customers, taking their orders and offering assistance
- Understanding good work habits
- Working with money, both at work and at home
- Following safety rules at work
- Reading help wanted ads, and completing a job application

English as a Second Language Module 3



Everyday English

The student will learn the essentials of basic English necessary to survive in any English speaking country

- Introducing and completing an identification form
- Reading maps, following directions and using a payphone
- Calendars, times and dates, store hour signs, and the weather
- The supermarket, reading price tags and expiration dates
- Shopping for clothes, comparison shopping, and writing checks
- Buying or renting a home, asking for simple repairs
- Making doctors' appointments, listening to doctors' instructions
- Reading help wanted ads, completing job applications
- Using public transportation and reading traffic signs

English as a Second Language Module 4

Basic Skills in Reading

The student readings include a variety of sources such as popular literature, classical literature, articles, reviews, and workplace-related materials.

- Fiction - includes many different examples from novels and short stories
- Nonfiction - biographies, autobiographies, essays, magazine articles, reviews
- Poetry and Drama - popular, social, and classical aspects of each are covered
- Prose and Visual Information - brochures and ads, calendars and schedules, forms and documents, manuals and handbooks, drawings and diagrams, charts and graphs

English as a Second Language Module 5

Basic Skills in Writing

Writing is a form of expression and communication. When the student writes well, others can understand what they are saying. The student will learn to use the writing process to their advantage.

- Essay and Creative Writing - the writing process, narrative writing, descriptive writing, expository writing, persuasive writing
- Workplace and Personal Writing - letter writing, job search writing, workplace writing, explanatory writing, report writing
- Grammar Guide - mechanics, usage, sentence structure
- Writing Handbook - models, editing, checklist, proofreading



ACADEMIC MAJOR 4: SOFTWARE ENGINEERING (SOFTWARE)

PhD IN SOFTWARE ENGINEERING (SOFTWARE)

Program Overview

Computer software engineers bear the responsibility for developing and designing software. Prospective students who make up their mind to engage in a PhD in software engineering will for the most part be employed in research and teaching disciplines. A good proportion of graduates also work in the private and public sectors in research and development. Recipients of the degree acquire critical skills and application of theories in the domain of mathematical analysis and computer science.

The acquired techniques enable engineers in developing strategies to basically change software modernization, creation, and evaluation skills. Individuals who obtain this degree will develop the vision and direction for design, testing and the development of software and will head teams that develop documentation, diagrams, algorithms and flowcharts.

Benefits of the PhD Program

Successful completion of this degree program renders graduates with the following capabilities:

- Graduates will be adequately equipped for faculty positions in software engineering, for research positions in industrial laboratories, and for stewardship positions in development in application shops as well as in computer industry.
- Graduates will be distinguished, as faculty, by their indisputable understanding of software design and development issues, will profile their choice of research problems and evaluation of research results.
- They will as manufacturing developers, comprehend academic research issues alongside engineering constraints that arise from public policy, regulatory, market, and economic issues.
- As senior software system developers, they will have a characteristic viewpoint that addresses particular problems in the context of the doctrine and fallout of the field.
- Graduates will have a clue about practical issues of software design and development from requirements acquisition through maintenance. They will be ready to get into research or advanced development positions in application areas, distributed networks, embedded/critical systems, and other specialties as well as conventional software system development.
- Finally, graduates will be acquainted with managing projects and about the software industry that they will not be bias about business questions.

Requirements



The PhD program requires 54 credit hours of core courses including at least 12 hours of research courses outside of the core courses. At least 18 credits out of the 54 credit hours must be at the 800 level. 600 level courses are not counted in the coursework requirement except for courses related to student's Qualifying Examination.

Students are also required to take 15 hours of research seminar courses.

Below is a breakdown of the Doctoral program in IT with Concentration in Software requirements:

- Completion of Coursework
 - Software Engineering Research Seminars (15 hours)
 - Courses in Area of Concentration (33 hours) (Manuscript development)
 - Quantitative Research Methods/Statistics (3 hours)
 - Qualitative Research Methods (3 hours)
- Doctoral degree comprehensive examination
- Submission/Publication of three peer reviewed journal and three conference articles (facilitated through one-to-one mentoring of ICT-U faculty members)
- Scientific (theory-driven) thesis/dissertation
- Public Defense of thesis/dissertation

Courses

The credit hours of the course work must be chosen from the compulsory courses, 600-level courses as well as in the 700 and 800-levels courses.

600-level courses

Object-Oriented Software Specification and Construction (3 credit hours)

Software Requirements Analysis and Specification (3 credit hours)

Software Modeling and Architectural Design (3 credit hours)

Distributed Software Engineering (3 credit hours)

Formal Methods and Models in Software Engineering (3 credit hours)

Software Project Management (3 credit hours)

Software Project Laboratory (3 credit hours)

Software Project Economics (3 credit hours)

User Interface Design and Development (3 credit hours)

Software Testing (3 credit hours)



Software Engineering for the World Wide Web (3 credit hours)

Component-Based Software Development (3 credit hours)

700 and 800-level Courses

Advanced Software Requirements (3 credit hours)

Reusable Software Architectures (3 credit hours)

Precise Modeling (3 credit hours)

Quality of Service for Software Architectures (3 credit hours)

Software Engineering Experimentation (3 credit hours)

Secure Software Design and Programming (3 credit hours)

Advanced Topics in Software Engineering (3 credit hours)

Directed Readings in Software Engineering (3 credit hours)

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Research Project (3 credit hours)

Software Engineering Seminar (3 credit hours)

Software Maintenance and Reuse (3 credit hours)

Software for Critical Systems (3 credit hours)

Program Analysis for Software Testing (3 credit hours)

Software Analysis and Design of Real-Time Systems (3 credit hours)

Special Topics in Web-Based Software (3 credit hours)

Compulsory Courses

Quantitative Methods and Experimental Design in Computer Science (3 credit hours)

Concurrent Software Systems (3 credit hours)

Distributed Software Systems (3 credit hours)

Individual Project in Electronic Commerce (3 credit hours)

Application Frameworks for Windowed Information Systems (3 credit hours)

Data Warehousing and Mining (3 credit hours)

Advanced Database Management (3 credit hours)

Object-Oriented Database Systems (3 credit hours)

Knowledge Management for E-Business (3 credit hours)

Data Mining in Multimedia Databases (3 credit hours)

Data Mining for Homeland Security (3 credit hours)

Information Systems Policy and Administration (3 credit hours)



- Directed Readings in Information Systems (3 credit hours)
- Advanced Topics in Information Systems (3 credit hours)
- Research Project (3 credit hours)
- Distributed Database Management Systems (3 credit hours)
- Networks and Distributed Systems Security (3 credit hours)
- Intelligent Databases (3 credit hours)
- Information Security and Practice (3 credit hours)
- Network Security (3 credit hours)
- Database and Distributed Systems Security (3 credit hours)
- Secure Electronic Commerce (3 credit hours)
- Models for Computer Security (3 credit hours)