

Module: Computer Architecture 161

Module name:	Computer Architecture 161
Code:	COA161
NQF level:	5
Type:	Core – Diploma in Information Technology (all stream)
Contact time:	48 hours
Structured time:	8 hours
Self-directed time:	24 hours
Notional hours:	80 hours
Credits:	8
Prerequisites:	None

Purpose

Students will gain the skills and knowledge necessary to perform various essential tasks on personal computers. As a practical course, the focus is to impart useful skills on the students in order to enhance the ability to install, troubleshoot, repair and maintain computer systems.

Outcomes

Upon successful completion of this module, the student will be able to:

- Demonstrate an informed understanding of the technological components that make up a personal computer, understanding of the key terms, concepts, facts, general principles, rules and theories that is required for assembling a personal computer system.
- Select and apply standard methods, procedures or techniques regarding the installation and configuration of an operating systems, and to plan and manage an implementation process.
- Demonstrate the ability to gather information from a range of manufacturers to convey troubleshooting techniques to users.
- Demonstrate an informed understanding to assemble components based on customer requirements.
- Demonstrate the ability to select and apply standard methods, procedures for safely diagnose, resolve, and document common hardware and software issues.
- Demonstrate an informed understanding of the ability to identify tools, diagnostic procedures and troubleshooting techniques for printers and scanners.

Assessment

Assessment is performed using a variety of instruments:

- Continuous evaluation of theoretical work through written assignments, formative tests, and a summative test.
- Continuous evaluation through tracking of progress, offering support, guidance and provision of constant stream of opportunities to prove mastery of subject material and pursuing more challenging work as they master the basics.
- Final assessment through an examination.

Teaching and Learning

Learning materials

Prescribed books (EBSCO)

- 📖 **Vermaat, M.E., Sebok, S.L., Freund, S.M., Campbell, J.T. and Frydenberg, M., 2018. of the prescribed book: Discovering Computers Enhanced: Tools, Apps, Devices and the Upgrading and Repairing PC's**
- 📖 **Docter, Q., Dulaney, E. and Skandier, T., 2015. CompTIA A+ Complete Study Guide: Exams 220-901 and 220-902. John Wiley & Sons**

Additional Material

- 📖 **Gookin, D., 2017. Troubleshooting and Maintaining Your PC All-in-One Desk Reference For Dummies. John Wiley & Sons.**

Learning activities

Learning will be facilitated by the lecturer with student centred activities that involve problem-based learning where pupils are presented with challenges that replicate the situation in the real-world environment. This will be achieved through a combination between presentation of theoretical concepts, guided exercises, group work and discussions during the module.

Notional learning hours

Contact	Distance	Other	Type of learning activities	% Learning
y	y	n	Lectures (face-to-face, limited interaction or technologically mediated)	40%
y	y	n	Tutorials: individual groups	20%
n	y	n	Syndicate groups	10%
n	y	n	Independent self-study of standard texts and references (study guides, books, journal articles)	10%
n	y	n	Independent self-study of specially prepared materials (case studies, multi-media, etc.	20%

Syllabus

- Computer terminology.
- Hardware and software overview.
- External components and peripherals, internal desktop components
- Install, configure, optimize, and upgrade personal computer components
- Add, remove, and configure internal and external storage devices
- Diagnostic procedures, troubleshooting techniques for personal computers.
- Power supplies and connectors.
- Power problems and solutions

- Input and output devices.
- Troubleshooting of various components.
- Installing and configuring operating systems.
- Installing and configuring a printer.