Module: Scripting and Syntax 361

Module name:	Scripting and Syntax 361
Code:	SSX361
NQF level:	6
Type:	Speciality – Diploma in Information Technology (Programming)
Contact Time:	108 hours
Structured time:	18 hours
Self-directed time:	54 hours
Notional hours:	180 hours
Credits:	18
Prerequisites:	PRG262

Purpose

The main focus of this module is on providing a comprehensive foundation sufficient for students to create new and/or modify existing applications by means of creating plugins and extensions from a multitude of scripting languages, along with automating tasks, administering systems, and extraction of data. This module will give the student the necessary skills to master programming syntaxes independent of the programming language being faced with.

Outcomes

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

- An understanding of integrated knowledge of scripting techniques and concepts.
- The ability to develop and communicate a solid understanding of the more advanced concepts of programming within scripting languages.
- The ability to manage processes in unfamiliar and variable contexts through the use of tools and services to develop computing systems independent of the scripting language being used.
- The ability to create plugins and extensions for existing applications, and to successfully automate tasks, extract data, and administer systems as required.

Assessment

- Continuous evaluation of theoretical work through a formative and a summative test.
- Continuous evaluation of two projects, whereby the student design, implement and present on the outcome of the programming concepts for a given problem context.
- Final assessment through a written examination.

Teaching and Learning

Learning materials
Prescribed books (EBSCO)

- 📖 *Sheiko, D. (2015)* **JavaScript Unlocked.** *Birmingham, UK: Packt Publishing (Community Experience Distilled).*
- 📖 *Bhasin, H. (2019)* **Python Basics : A Self-Teaching Introduction.** *Dulles, Virginia:*

    Mercury Learning & Information.
- 📖 *Mallett, A. (2015)* **Mastering Linux Shell Scripting***. Birmingham: Packt Publishing (Community Experience Distilled).*
- 📖 *Lott, S. F. (2015) Python Essentials. Birmingham, UK: Packt Publishing (Community Experience Distilled).*

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

- Concepts;
- Conditional Statements;
- Datatypes;
- Loops;
- File IO;
- Modules;
- Packages;
- Comprehensions;
- Decorators;
- Virtual Environments;
- Strings;
- Methods;
- Objects;
- Classes;
- Attributes;
- Arrays;

- Hashes;
- Loops;
- Conditional Statements;
- Modules;
- Rails