CS1028 Programming for Science and Engineering
Lecture 01 - Course Set Up

Dr Bob Duncan

Meston Building, Room 223
University of Aberdeen

robert.duncan@abdn.ac.uk

12 September 2019

Index

Course Team

Course Co-ordinator: Dr Bob Duncan

Teaching Team:
Dr Bob Duncan, Lecturer
Dr Daniel Vogels, Lecturer
Organisation:
BD will teach from Academic Week 7 - 11
DV will teach from Academic Week 13 - 17
Week 12 will be for Assessment 1 and Practicals
Week 18 will be for Assessment 2 and the Revision Lecture
Weeks 19 and 20 are Exam weeks

Key Facts

Lecture times

- Thursday: 15:00 - 16:00 New Kings 1
- Friday: 13:00 - 14:00 Fraser Noble 2
- Please bring along lecture notes

Practicals:

- Please sign up for a slot if you have not already done so
- Starts in week 8
- Runs during academic weeks 8-17
- Both attendance and preparation are compulsory

Key Facts

Practical Slots

- Monday: 09:00 - 11:00 Edward Wright S84
- Monday: 14:00 - 16:00 Mary's B28
- Wednesday: 09:00 - 11:00 Cruickshank 218
- Wednesday: 11:00 - 13:00 William Gauld S26
- Thursday: 11:00 - 13:00 Edward Wright S84
- Friday: 11:00 - 13:00 Cruickshank 218

Academic Week Numbers:
https://www.abdn.ac.uk/students/academic-life/week-numbers-634.php

Key Facts

myAberdeen

- https://abdn.blackboard.com/
  (redirects to abdn.blackboard.com)
- myAberdeen for this course will have:
  - All lecture notes (that I give)
  - Material for practicals
  - Example examination-style questions
  - The coursework and marking/feedback template
- All documents in one place
- Submission of coursework is via myAberdeen

Key Facts

Coursework and Practicals

- Lecture 1 contains information about your coursework, but the rest is on myAberdeen. You need to go and look at that soon
- Lecture 1 includes information about practicals. You should bring your laptop along to practicals, especially for the first week, as you will be able to set up your own programming environment

Key Facts

Lecture Overview

- You should attend all lectures in order to be properly aware of what to expect in the examination
- Lecture notes are available on myAberdeen, but it may be necessary for you also to take your own notes during lectures
- We may say and write things in class that are not in the lecture notes, but that you do need to know
- Week 18 is revision week. At most there will be revision lectures this week. This will be decided closer to the time. If you speak American English then when we say ‘revision we mean ‘review: these lectures are primarily to remind you of the course content, not to correct mistakes

Key Facts

Assessment

- 1st Attempt:
  - One two-hour written examination (75%)
  - Two assessments - 1 in Academic Week 12 and 1 in Academic Week 18 (12.5% each)
- Resit:
  - Candidates only resit those components (written examination or assessment) which they failed at first attempt
  - Written examination at resit is 1 two-hour paper

Key Facts

Course Structure

- This course will be delivered in two halves. The first provides a self-contained introduction to computer programming. It assumes no prior knowledge of computers or programming and runs for 5 weeks
- The second will build on the first. It is particularly designed to be of use to those studying Science and Engineering subjects, broadly interpreted, as well as Computing Science and IT specialists and also runs for 5 weeks
- There is a week in between while you complete your practicals and carry out the first assessment
- During the final week, which is also Revision Week, you complete the second assessment

Key Facts

Practicals and Coursework

- The words ‘practical and ‘tutorial are synonymous
- **You must attend practicals for attendance monitoring. This is a University requirement**
- Do not forge signatures, or ask others to do so on your behalf. This is fraud. Similar remarks pertain to scanned codes
- These begin in the second week of teaching (week 8)
- Practicals will be used to provide support for your learning
  - You should use practicals as you need them
  - Each week there will be a long series of questions to answer. It is suggested that you look at some of these before each practical. There are too many to be able to work through during each practical, and some of them are quite hard or open-ended
  - There will be some hands-on practical component to the course
- There is no practical in the revision week

Key Facts

C6s

- Schools should not report an undergraduate or postgraduate (taught) student as at risk C6 unless the following minimum criteria have been met:
  - Either (i) Absence for a continuous period of 10 working days or 25% of a course (whichever is less) without good cause being reported
  - or (ii) Absence from two small group teaching sessions for a course without good cause (e.g., tutorial, laboratory class, any other activity where attendance is expected and can be monitored)
  - or (iii) Failure to submit a piece of summative or a substantial piece of formative in-course assessment for a course, by the stated deadline (e.g. class test, formative essay)

Key Facts

First Part- Basics

- Lecture 1 - Course Set Up
- Lecture 2 - Introduction and Writing Your First Programme
- Lecture 3 - Built in Types of Data I
- Lecture 4 - Built in Types of Data II
- Lecture 5 - Fundamental Programming Concepts including Variables and Scope
- Lecture 6 - Conditional Statements, and Iteration
- Lecture 7 - Arrays I
- Lecture 8 - Arrays II
- Lecture 9 - Programs that Take Inputs, and Generate Outputs
- Lecture 10 - How to Structure and Debug Code

Key Facts

Second Part - Functions

- Lecture 11 - Scope and Functions I
- Lecture 12 - Functions II
- Lecture 13 - Recursion
- Lecture 14 - Modular Programming
- Lecture 15 - Importing and Invoking Code within Other Code
- Lecture 16 - Floating-point Numbers
- Lecture 17 - Libraries for Scientific Computing
- Lecture 18 - Skill in Deploying the Above Concepts I
- Lecture 19 - Skill in Deploying the Above Concepts II
- Lecture 20 - Skill in Deploying the Above Concepts III

Key Facts

Textbook:

- Robert Sedgewick, Kevin Wayne, and Robert Dondero, Introduction to Programming in Python, Pearson, 2010 - 2015
- Free online version: https://introcs.cs.princeton.edu/python/home/
- You can also purchase your own personal electronic copy from Amazon for £20.84

Other materials:

- We will advise you throughout the course to consider other sources

Key Facts

Communications

- Attend lectures
- Read your university email
- Look at myAberdeen for announcements
- Attend practicals (they are monitored)
- If you've got a problem, ask the course team
- **When you email me, make sure you put the course code CS1028 as the FIRST word in the Subject line!**

Class Reps

Being a class rep:

- Communicate with your class and tell us what they think
- Your role is to be accessible and to gather views from other students
- Work with us to improve teaching and learning
- Must complete online training session, probably around academic week 11 or 12
- Must attend Student Staff Liason Committee meetings
- Learn more at: https://www.ausa.org.uk/representationhttps://www.ausa.org.uk/representation
- Nominate yourself at: https://www.ausa.org.uk/electionshttps://www.ausa.org.uk/elections

The End