Advanced Software Engineering
Module Handbook

2023/24 Students

Semester 1

School of Built Environment, Engineering and Computing

V1.0

Contents

Communication Protocol: *module staff will reply to student questions within a reasonable time but this will normally be within office hours only. Students are advised to check this handbook and also to see if there are any online/noticeboard announcements or FAQ answers that deal with their enquiry before contacting staff.*

1 What this Module is About

1.1   Introduction from the Module Leader

This module aims to extend programming skills and knowledge to a more advanced level of engineering development. It also aims to significantly develop transferable programming and design abilities.

Advanced Software Engineering tackles one of the most important aspects of becoming a software engineer, namely the knowledge and practice that transferring from one programming language to another, is both a straightforward and necessary aspect to a software engineer's working life. It also introduces concepts and practices used by working software engineers in industry.

1.2   Module Aims

The aim of this module is to provide the student with the necessary skills to be a practising software developer. These skills include the ability to quickly transfer from one programming language to another, by identifying what is common to all programming languages and to understand those common concepts of programming languages. The student will also be introduced to a wide range of software engineering tools and techniques, such as advanced OO techniques and component-based development using a visual environment.

1.3   Module Learning Outcomes

On completion of this module the student should be able to:

1. Evaluate and demonstrate professional approaches to developing software systems

2. Transfer skills to the use of alternative programming languages

3. Apply and evaluate advanced programming concepts

1.4   Module Learning Activities

The module is delivered in a blended learning format. There is a suggested weekly breakdown but the lecture and tutorial material is available at the start of the module. There is pre-recorded lecture and practical material. You should minimally be up to date with the weekly breakdown, but you may decide to get ahead of the weekly breakdown.

1.5   Graduate Attributes Developed and Assessed

| Digital Literacy | Use of Integrated Development Environment within lab sessions. | Correct use of IDE is required to complete practical based assessments. |
| Global Outlook | Use of globally recognised programming languages. | Correct use of language is solving practical problems. |

1.6 Communication

Via MyBeckett.

2   Weekly Schedule

Schedule is a guide only and may change as circumstances dictate. Please see the module content on myBeckett for the most up to date list and order of topics.

Contact Hours

A pre-recorded lecture appears on the timetable but it should be watched before each practical session. The lab material has also been pre-recorded. Students are encouraged to attend the onsite sessions but there are several and I am happy for you to come to a suitable one. This will be discussed in the first session and beforehand on Discord. Please sign up to the Discord channel as it is a far better method of communicating than email.

Communication will be via Discord, please join the server.

3   Key Resources to Support Learning

We will be using Microsoft Visual Studio. We will be using C# as the main language, although you are free to implement the assignment in any suitable OO language. You can download a free version here. Please note this is not a C# module. It is assumed that you are familiar with an OO language such as Java. C# is merely the example language and looks good on your CV.
https://www.visualstudio.com/vs/community/
Select for developing .net desktop.
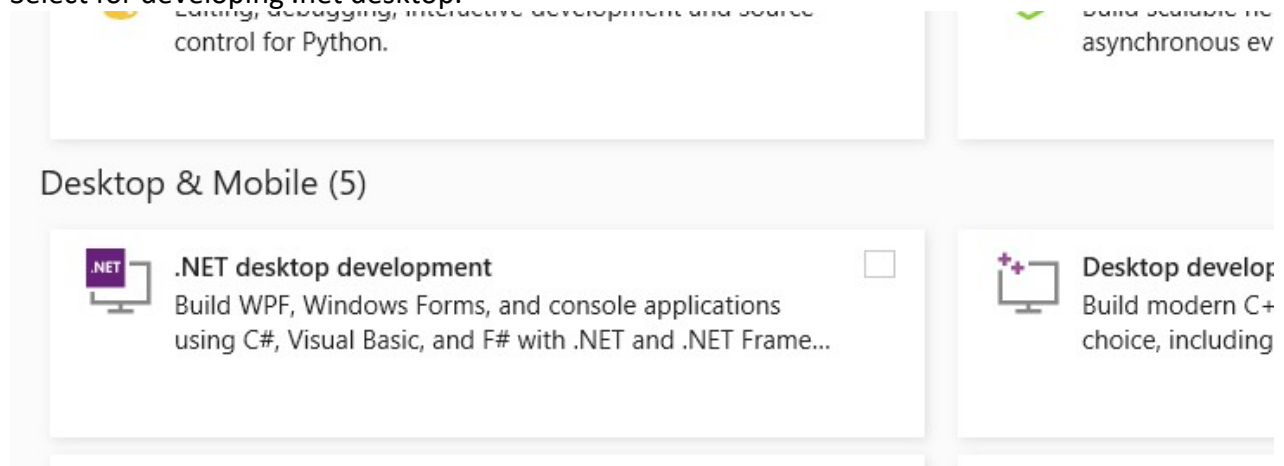
All disabled students requiring additional support or alternative arrangements must declare and provide evidence of their disability to the Disability Advice Team as early as possible:
www.leedsbeckett.ac.uk/studenthub/disability-advice

Lecture and Practical Resources

There are numerous videos. They are organised into "sessions" that correspond to each week and you are required to at least progress through the material at one session per week, but you have the opportunity to progress at a faster rate than this and in the order that you require. All the material, both lecture and lab is pre-recorded. The live sessions will assume that you have questions after watching these videos. See "Learning Material" on myBeckett.

3.1   Assessment Summary
See assessment section on myBeckett.