# F20SC Industrial Programming

## COURSE DETAILS

**Course Code:** F20SC  
**Full Course Title:** Industrial Programming  
**SCQF Level:** 10  
**SCAF Credits:** 15  
**Available as Elective:** No

## DELIVERY LEVEL

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Postgraduate Taught</th>
<th>Postgraduate Research</th>
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<tr>
<td>Yes</td>
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Additional Information:

## COURSE AIMS

- To develop proficiency in contemporary industrial programming languages and platforms
- To enable the elaboration and combination of system components in different languages
- To enable an agile and flexible response to changes in industrial practices
- To enable participation by industrial practitioners to provide context and applicability

## LEARNING OUTCOMES – SUBJECT MASTERY

- Basic appreciation of role of different programming paradigms in programming/managing systems
- Understanding of core characteristics of contemporary operating systems
- Knowledge of key abstractions across programming languages
- Technical proficiency in advanced language techniques in different programming paradigms

## LEARNING OUTCOMES – PERSONAL ABILITIES

- Ability to choose/deploy/combine appropriate languages, architectures and tools
- Ability to employ an agile approach to software development

## SYLLABUS

- Programming in a modern general purpose language e.g. C#, C++11
- Programming for concurrency using state-of-the-art libraries and language extensions
- Rapid prototyping in a major scripting language with associated libraries and frameworks e.g. Python, PHP, Ruby, Lua
- Coverage of advanced language features where languages have been met in earlier courses
- Foresight of emerging programming language technologies
- Practical experience with standard environments (Unix, Windows), virtual machines (.NET) and tools (e.g. compilers, debuggers, libraries, shell)

Prerequisites: Programming skills in a language such as C or Java.

## COURSE RELATIONSHIPS
LOCATION AND ASSESSMENT METHODS

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<thead>
<tr>
<th>Edi</th>
<th>SBC</th>
<th>Ork</th>
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<th>Malay</th>
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<td>Assessment</td>
<td>Semester 1</td>
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Part of the coursework-based assessment of the course are 2 class-tests (on C# and Python), each contributing 15% to the overall mark.