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| <u>Module Title</u> | Formal Specification | <u>School</u> | Mathematical & Computer Sciences | | | | <u>On or Off-Campus</u> | On Campus | |
| <u>Module Co-ordinator</u> | Hunter Davis, Fairouz Kamareddine | <u>SCQF Level</u> | 8 | <u>Module Code</u> | F22HO | <u>Term</u> | 2 | <u>Credits</u> | 10 |

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|---|---|---------------------------------------|--|-----|----|---|--|--|
| 1. <u>Pre-requisites</u> | F21HI2 Logic & Proof | | | | | | | |
| 2. <u>Linked Modules (specify if synoptic)</u> | F22HW3 Prototyping from Specification (synoptic) | | | | | | | |
| 3. <u>Excluded Modules</u> | | | | | | | | |
| 4. <u>Replacement Module</u> | Code: | 5. <u>Availability as an Elective</u> | | Yes | No | ✓ | | |
| | Date Of Replacement: | | | | | | | |
| 6. <u>Degrees for which this is a core module</u> | BSc Computer Science; MEng Software Engineering | | | | | | | |
| 7. <u>Aims</u> | | | | | | | | |
| To introduce formal specification. | | | | | | | | |
| 8. <u>Syllabus</u> | | | | | | | | |
| Reprise of logic & set theory. Introduction to Z notation Relations and functions Schemas and specification structure Sequences Development of Z specifications from informal requirements | | | | | | | | |
| 9. <u>Learning Outcomes</u> | | | | | | | | |
| <u>Subject Mastery</u> | <i>Understanding, Knowledge and Subject-Specific Skills</i> <ul style="list-style-type: none"> ◆ To be proficient in the use of a formal notation in modelling examples of real world and safety critical systems. ◆ To understand and reason with formal specifications. ◆ To create and validate specification documents. ◆ To foresee the refinement process from specifications to programs. ◆ Formulate specification documentation ◆ Evaluate and reason the formal specifications | | | | | | | |

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| <u>Personal Abilities</u> | <i>Cognitive skills, Core skills and Professional Awareness</i> | | | | |
| | <ul style="list-style-type: none"> ◆ Understand the importance of specification and its distinction from implementation ◆ Further develop mathematical specification skills | | | | |
| 10. <u>Assessment Methods</u> | | | | 11. <u>Re-assessment Methods</u> | |
| Method (e.g. exam) | Length of Examination | Weighting (%) | Synoptic modules? | Method (e.g. exam) | Length of Examination |
| Exam | 3 hours | 37.5% | F22HW3 | Exam | 3 hours |
| Coursework | | 12.5% | | | |
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| 12. <u>Date and Version</u> | | | | | |
| Date of Proposal | 7/12/04 | Date of Implementation | October 2004 | Version Number | 2.0 |