UNSW COURSE REVISION PROPOSAL

COMP2111 – System Modelling and Design

Created: 22 Mar 2017 Proposal Last Updated: 30 Mar 2017

Offering Details:

Key Details and Contacts

Key Course Details	
Course Name (Official)	System Modelling and Design
Standard Name (SIMS)	System Modelling and Design
Course Code	COMP2111
Units of Credit (UOC)	6
Career	Undergraduate
Level	2
First semester and year the revised changes will take effect	2018 Semester 1

Contact Details

Proposal Proponent

Name	Email	Role
Fethi Rabhi	f.rabhi@unsw.edu.au	Professor, School of Computer Science and Engineering

Proposal Author(s)

Name	Email	Role
Gabriele Keller	keller@cse.unsw.edu.au	Senior Lecturer, School of Computer Science and Engineering
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Proposal Contact

Name	Email	Role
Fethi Rabhi	f.rabhi@unsw.edu.au	Professor, School of Computer Science and Engineering

Optional Additional Endorsers	Not specified
Academic Unit responsible for course	School of Computer Science and Engineering
Parent Academic Unit	Faculty of Engineering

Proposal Concept

Summary of Proposal

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This proposal is a revision of an existing course, COMP2111 *System Modelling and Design*.

The main change is that we broaden the set of concepts acquired in MATH1081 being reinforced by demonstrating their relevance to COMP subjects.

See the attachment for proposed content. The background is provided in an attachment to the SENG2011 revision proposal.

Justification for proposal

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The proposed changes were developed as a part of the Software Engineering Program review.

The course, as it was taught, was slightly too aspirational in that too many students struggled with the content at stage 2 of their degree. This revision tones down some the formal content and at the same time broadens the scope in order to increase the benefit for later courses with a formal inclination.

The attached documentation expands on the history of this and related courses as well as how they fit in with all CSE degrees, not just SE, with the hope that students in other CSE degree programs will find the content relevant.

Attachments

Attach documentation to this proposal

No.	Description	File(s)
1	details of the proposed revision to COMP2111	newCOMP2111.pdf

Learning and Teaching

Learning & Teaching development and support	
Are there Learning & Teaching space requirements for the course beyond those that can be accommodated by CATS spaces?	No
Have you discussed with the Learning Centre and Learning and Teaching what language and/or academic skills development resources and/or which teaching and learning strategies might be suited to this course?	No
Are many students in this course at a key transition point where their academic skills are likely to need development, e.g. from one kind of educational institution or type of program to another or into education after a significant break?	No

Consultation

Internal consultation

Internal Consultation

Consultants	None specified
Details	This proposal is as a result of a review of the Software Engineering degree which was conducted between July and October. A steering group comprising academics from the School as well as external people was formed and met on a regular basis. A subpanel met to consider issues concerning COMP2111 and SENG2011.
Attachments	None specified

External consultation

External Consultation

Consultants	None specified
Details	None specified
Attachments	None specified

Interested Parties	Not specified

Related Proposals

Related Proposals

Code	Proposal Name	Type	Date	Status
SENG2011	Workshop on Reasoning about Programs: from Specification to Implementation	Course Revision (UG)	Mar 2017	Draft Proposal
SENG2021	Requirements and Design Workshop	Course Revision (UG)	Mar 2017	Submitted

Endorsements and Comments

Endorsement history	No endorsements have been recorded for this proposal (yet).
Comments	No comments posted

Administration:

Key Course Details

Key Admin Details	
Course Name (Official)	System Modelling and Design
Student System ID	00056831
Can course be taken as General Education elective?	No
Field of Education	020305 – Systems Analysis and Design

Course Review	
Next course review date	January 01, 2020
Provide details of any particular factors that need to be considered at that review.	Not specified

Delivery and Attendance	
Campus administering the Course	Sydney

Teaching Shares by School/Faculty

School	Teaching Share (%)
School of Computer Science and Engineering	100
Total Share	**100**

Semesters the course is offered

	Summer Semester	Semester 1	Semester 2
2017	No	No	No
2018	No	**Yes**	No
2019	No	**Yes**	No
2020	No	**Yes**	No

Teaching mode and contact hours: Standard Offering Mode

Standard offering contact hours per week

Learning Activity	Hours/Week
Lecture	3
Tutorial/Laboratory	0
Tutorial	1
Laboratory	0
Web-based Online Learning Activity	0
Clinical/Fieldwork	0
Distance Learning	0
Seminar	0
Studio	0
Meeting/Consultation	0
Total Hours per week	**4**

Primary delivery mode	Classroom
Secondary delivery modes	Not specified
Additional information about the delivery modes for this course	Not specified

Staff

Staff associated with course

Course Convenor

Name	Email	Role
Kai Engelhardt	kaie@cse.unsw.edu.au	–

Administrative Contact	Name	Email	Role
	Cassandra Nock	cassandra@CSE.UNSW.EDU.AU	Administration Manager, School of Computer Science and Engineering

Supplementary Information:

Resources

Student Resources	
Prescribed Resources	None specified
Recommended Resources	None specified

Experience and Assumed Knowledge

Industrial Experience Component	
Industrial Experience Component	Not specified

Assumed Knowledge	
Assumed Knowledge	• moderate competence in programming in an imperative language such as C as would be acquired by taking two introductory programming courses in year 1 • familiarity with concepts from discrete mathematics (MATH1081) such as set theory, propositional logic, first-order logic • familiarity with the concept of mathematical proof • grasp of requirements concepts from SENG1031

Academic Structure:

Academic Structure

Prerequisites	
Prerequisite courses	COMP1511 - Introduction to Programming (UG) COMP1531 - Software Engineering Fundamentals (UG) MATH1081 - Discrete Mathematics (UG)
Prerequisite programs	Not specified
Prerequisite streams	Not specified
Prerequisite conditions	(COMP1511 or COMP1917), (COMP1531 or SENG1031), MATH1081

Exclusions	
Excluded Courses	Not specified
Excluded Programs	Not specified
Excluded Streams	Not specified

Equivalent	
Equivalent courses	Not specified

Assessment

Assessment

Grading Basis: Standard UNSW grades (e.g. HD, DN, CR, PS, FL)

Assessment items and their relationship to Course Learning Outcomes

	Assessment Title	Assessment Type	Weight (%)
1	3 Assignments	Assignment	50%
	Assessment Description:	3 assignments of roughly equal weight; in groups of two, students translate provided requirements into formal specifications that they then refine to code using the methods taught in the course. Typically, deliverables include at least the source code (in C) and a document (in LaTeX) that details (a) how the requirements match the specification (b) how the specification and the implementation are related (c) proofs to substantiate any claims made in (b).	
2	final exam	Examination	50%
	Assessment Description:	the final exam will test the students understanding of the concepts introduced in the course; feedback typically consists of published solutions to the exam paper and individual marks for questions	
Total Weight			**100%**

3 Assignments

final exam

Curriculum Mapping

Course Learning Outcomes

Specify the learning outcomes that students should achieve upon successful completion of this course

1	develop an appreciation of the relevance of discrete mathematics to computing
2	improve facility in the use of discrete mathematics concepts
3	improve capacity for rigorous reasoning
4	learn to use a toolkit of formal modelling approaches frequently used in computing

Teaching strategies and Rationale	
Teaching Strategies and Rationale	Not specified

Course Aims	
Course Aims	Not specified

Publications and Marketing:

Publications

Course Description	
Description of course that can be used in online publications (e.g. Handbook website, Faculty websites or other online catalogue systems)	This course introduces rigorous and formal methods for modelling system behaviour. These methods support the modelling of abstract specifications and the refinement of abstract specifications through to concrete implementations. Consistency of formal development is verified by proof obligations and formal proof. The course will cover: specification, refinement, implementation, proof obligations, and proof. It re-inforces, and builds on, prerequisite knowledge from MATH1081, especially set theory and predicate logic. The course will use case-studies and assignments to develop competence. The methods developed in this course are used in the SENG2011 workshops and in safety-critical industrial contexts.

Key Search Terms	
List key search terms that might be used to search for this course (e.g. via the Handbook or Google searches).	Not specified