The University of Southern Queensland

Course specification

The current and official versions of the course specifications are available on the web at <http://www.usq.edu.au/coursespecification/current>.
Please consult the web for updates that may occur during the year.

Description: Project Requirements Management

Subject	Cat-nbr	Class	Term	Mode	Units	Campus
ENG	8111	91353	2, 2009	ONC	1.00	Springfield

Academic group: FOENS
Academic org: FOES03
Student contribution band: 2
ASCED code: 039999

STAFFING

Moderator: David Thorpe

RATIONALE

Project Management is a discipline attracting considerable industry attention. By its nature Project Management has a number of specialist disciplines although most tertiary Project Management education in Australia is of a generalist or engineering nature. One of the specialisations in Project Management is complex project management, which concentrates on the higher level knowledge and processes required for managing projects involving complex technical, legal, governance and contractual issues. The project requirements management course addresses the role of technical and non-technical requirements throughout the lifecycle of complex projects. This is achieved by describing a systems engineering approach to requirements analysis and specification for a complex project.

SYNOPSIS

The aim of the course is to introduce students to the critical nature of requirements in complex project environments and to explain the role that requirements play throughout the lifecycle. At the end of the course, students will appreciate the critical role played by requirements in major projects, understand the attributes of effective requirements, and know how requirements management occurs throughout the life of a complex project.

OBJECTIVES

The course objectives define the student learning outcomes for a course. The assessment item(s) that may be used to assess student achievement of an objective are shown in parenthesis. On completion of this course, students should be able to:

1. Discuss the fundamentals of the systems engineering philosophy and process.
2. Explain the major stages and objectives in a generic lifecycle model suitable for complex projects.
3. Demonstrate an understanding of the role of requirements at each stage in a generic project management lifecycle.

4. Explain why and how through life support issues influence the requirements management process.
5. Describe the attributes of an effective requirement.
6. Recall and apply problem solving principles based on the systems engineering philosophy to the analysis and specification of whole of life requirements for the management of a complex project.
7. Recall and explain a number of management related requirements that may be associated with typical complex projects.
8. Recall and apply tools, techniques and processes that may be used to help generate effective requirements.
9. Discuss the process for involving specialists from a range of technical disciplines in the technical requirements management process.
10. Apply self-directed research techniques to the investigation and use of tools and techniques of systems engineering.
11. Apply self-directed research techniques to key aspects of requirements management such as drafting initial requirements documentation and critiquing requirements documentation.

TOPICS

	Description	Weighting (%)
1.	Introduction: This module investigates the important role that requirements play in the overall project environment and hints at why project managers must take a keen interest in their project requirements. Some fundamental concepts are introduced including a system lifecycle model that is used to support the subsequent modules in this course that look at how the nature of requirements and their role in projects change as the project proceeds.	10.00
2.	Requirements to establish and scope projects: Projects are initiated in order to bring a product or service into operation in order to satisfy some defined need. Establishing that need requires key stakeholders to understand the desired level of capability that they are seeking, the current level of capability within their organization, and the resultant capability gap that needs to be closed by the project. This module explores how this capability gap is documented and agreed. The requirements that document the capability gap allow project staff to scope the project and estimate the likely cost, schedule and risks associated with closing the gap. A project may be initiated as a result.	15.00
3.	Requirements to support tendering and contract negotiation: The documented capability gap documented in the previous module can then be used as the basis of a more detailed analysis of requirements. This process aims at creating a formal specification of the desired level of function and performance needed from potential solutions to the capability gap. The formal specification provides the level of detail needed to support the tendering process. A tendering process is a convenient way of discovering the solution options available. There may be many potential solutions available that vary in terms of their ability to meet	15.00

documented requirements, their price, their risks, and their availability. A preferred solution will be selected and a contract established. The execution of the contract will be against the agreed specification of requirements.

4. Requirements to support contracting and acquisition: The contractor will use the contractual requirements to design, development and deliver their solution to the customer in accordance with the terms and conditions of the contract. Some aspects of the deliverables may come straight "off the shelf" (so to speak) and be provided to the customer. In more complex procurements, there will be elements of design, development and integration required before the system is ready for the customer. This may result in new hardware, software, processes or documentation being developed. The new elements will be designed against a subset of contractual requirements. The contractual requirements generally need to be expanded in detail to support detailed design and development if they are to properly specify the design requirements of the elements of the capability. Eventually, the contractor will be in a position to offer the capability to the customer for contractual acceptance. Acceptance will be largely based on the demonstrated satisfaction of the contractual requirements developed and agreed earlier in the process. This usually brings to an end the traditional acquisition contract. The importance of requirements, however, does not end with delivery of a capability to the customer. 10.00

5. The influence of through life support issues on requirements: Some issues relating to how the system is to be employed and supported will influence the requirement set. When projects proceed without considering through life issues, the users are often left with a system that meets the specified requirements but is difficult and expensive to maintain or change throughout its life. Modern issues including environmental impacts are also considered here. Given that most systems spend a vast majority of their life in this phase of the lifecycle, it makes sense to consider the through life issues right from the earliest stages. Even the final phase in a lifecycle, often called disposal, needs to be considered. The user pays for the disposal of the system. If the system has been designed to be easily disposed, the user is likely to be spared some potentially difficult and expensive decisions. 10.00

6. Non-technical project requirements: Every customer will have requirements for how they want the project executed. These requirements are different from the functional and physical requirements that define the problem and the solution respectively. These are requirements that may be termed "management requirements". Typical management requirements might include how the customer would like the system to be tested and evaluated before accepting it and finalising the contract. Other management requirements might relate to the 10.00

	conduct of progressive reviews as the system development proceeds. These requirements need to be determined by the customer early in the process and agreed to by the contractor. The requirements generally form an integral part of the contract between the customer and the contractor.	
7.	The impact of requirements management on project management: By exploring the nature of project management and the nine knowledge areas from the Project Management Body of Knowledge, it is possible to show the impact that requirements management is likely to have on project management. Project management people should take a keen interest in project requirements because of the impact requirements have on project management tasks.	10.00
8.	Writing effective requirements: Following the earlier modules, the critical and diverse role played by requirements throughout the project lifecycle should be clear. Also clear will be how common it is that poor requirements get written, approved and used in projects. These projects invariably fail or, at best, are responsible for introducing systems that do not completely close the capability gap that they were designed to close. This module explores the reasons why poor requirements continue to plague complex projects and outlines some tools and techniques that may help in writing effective requirements. It should be noted that gaining the ability, skill and judgement required to write effective requirements takes time. Being aware of the concepts, tools and techniques is, however, a great start.	15.00
9.	Course Review: No new material will be presented in this module. This module will review the course and draw out the main points from each module. Feedback on the content of the course and its delivery will be sought in order to improve subsequent courses.	5.00

TEXT and MATERIALS required to be PURCHASED or ACCESSED

ALL textbooks and materials are available for purchase from USQ BOOKSHOP (unless otherwise stated). Orders may be placed via secure internet, free fax 1800642453, phone 07 46312742 (within Australia), or mail. Overseas students should fax +61 7 46311743, or phone +61 7 46312742. For costs, further details, and internet ordering, use the 'Textbook Search' facility at http://bookshop.usq.edu.au click 'Semester', then enter your 'Course Code' (no spaces).

Students will also be required to access various system development standards during this course. These standards will either be available through the USQ Library or freely available on the Internet. Details of the required standards will be provided during the relevant course modules.

Alexander, I & Stevens, R 2002, *Writing better requirements*, Addison-Wesley, Boston.

Faulconbridge, R & Ryan, M 2005, *Engineering a system: managing complex technical projects*, Argos Press, Canberra, ACT.

REFERENCE MATERIALS

Reference materials are materials that, if accessed by students, may improve their knowledge and understanding of the material in the course and enrich their learning experience.

STUDENT WORKLOAD REQUIREMENTS

ACTIVITY	HOURS
Assessments	50.00
Lectures	20.00
Private Study	75.00
Tutorials	20.00

ASSESSMENT DETAILS

Description	Marks out of	Wtg (%)	Due date
ASSIGNMENT 1	300.00	30.00	21 Sep 2009
ASSIGNMENT 2	700.00	70.00	02 Nov 2009

IMPORTANT ASSESSMENT INFORMATION

1 Attendance requirements:
It is the students' responsibility to attend and participate appropriately in all activities (such as lectures, tutorials, laboratories and practical work) scheduled for them, and to study all material provided to them or required to be accessed by them to maximise their chance of meeting the objectives of the course and to be informed of course-related activities and administration.

2 Requirements for students to complete each assessment item satisfactorily:
To satisfactorily complete an individual assessment item a student must achieve at least 50% of the marks or a grade of at least C-. (Students may not have to satisfactorily complete each assessment item to receive a passing grade in this course.)

3 Penalties for late submission of required work:
If students submit assignments after the due date without extenuating circumstances then a penalty of 5% of the assigned mark may apply for each working day late up to a maximum of ten working days at which time a mark of zero can be recorded for that assignment.

4 Requirements for student to be awarded a passing grade in the course:
To be assured of receiving a passing grade in a course a student must obtain at least 50% of the total weighted marks for the course.

5 Method used to combine assessment results to attain final grade:
The final grades for students will be assigned on the basis of the weighted aggregate of the marks (or grades) obtained for each of the summative assessment items in the course.

6 Examination information:
There is no examination in this course.

7 Examination period when Deferred/Supplementary examinations will be held:
Not applicable

8 University Regulations:
Students should read USQ Regulations 5.1 Definitions, 5.6. Assessment, and 5.10 Academic Misconduct for further information and to avoid actions which might contravene University Regulations. These regulations can be found at the URL http://www.usq.edu.au/corporateservices/calendar/part5.htm or in the current USQ Handbook.

ASSESSMENT NOTES

1 Assignments: (i) Assignments must be submitted electronically through StudyDesk by 11.59pm (AEST) on the due date. (ii) Students must retain a copy of each assignment submitted for assessment. This must be produced within 24 hours if required by the examiner. (iii) The examiner may grant an extension of the due date of an assignment in extenuating circumstances. If the required extension is less than seven days, there is no need to obtain prior approval. In such cases, submit your assignment as soon as possible after the due date together with any supporting documentation that might be required. The authority for granting extensions rests with the relevant examiner. (iv) The examiner will normally only accept assessments that have been prepared using electronic media. (v) The examiner will not accept submission of assignments by facsimile. (vi) Students who are disadvantaged by these regulations may be given special consideration. They should contact the examiner to negotiate such special arrangements. (vii) In the event that a due date for an assignment falls on a local public holiday in their area, such as a show holiday, the due date for the assignment will be the next day. Students are to note on the assignment cover the date of the public holiday for the examiner's convenience.

2 Students who have undertaken all of the required assessments in a course but who have failed to meet some of the specified objectives of a course within the normally prescribed time may be awarded the temporary grade: IM (Incomplete - Make up). A temporary grade will only be awarded when, in the opinion of the examiner, a student will be able to achieve the remaining objectives of the course after a period of non directed personal study.

3 Students who, for medical, family/personal, or employment-related reasons, are unable to complete an assignment or to sit for an examination at the scheduled time may apply to defer an assessment in a course. Such a request must be accompanied by appropriate supporting documentation. The following temporary grade may be awarded IDM (Incomplete Deferred Make-up).

OTHER REQUIREMENTS

1 Students will require access to e-mail and internet access to UConnect for this course.
