

CS352-15 Project Management for Computer Scientists

21/22

Department

Computer Science

Level

Undergraduate Level 3

Module leader

Ian Saunders

Credit value

15

Module duration

10 weeks

Assessment

Multiple

Study location

University of Warwick main campus, Coventry

Description

Introductory description

Almost everything we do as computer scientists is packaged into a "project", often full of risk and uncertainty, yet we are expected to plan and forecast to deliver fully-featured high-quality products on time and within budget. In this module you will learn practical techniques to manage projects, you will hear from industry experts, and you will work as a team to develop a project of your own.

Module aims

The aims of the module are to make students into effective project managers. The module will:

- Equip students with the knowledge and practical skills required to manage projects;
- Examine a range of well established project management techniques, from 'traditional' to modern;
- Provide a link to computer science "in the real world", sharing in the practical experiences of industry experts

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

Students will develop robust project management techniques, including: defining measurable project objectives; identifying and engaging stakeholders; managing scope, schedule and budget; making forecasts and measuring success; risk categorisation and mitigation.

This module will cover a range of well established project management methodologies, frameworks and philosophies, including: PRINCE2, PMI (PMBOK), Waterfall, Scrum and Agile, Kanban and Lean.

Learning outcomes

By the end of the module, students should be able to:

- Appreciate the benefits of effective project management and the value of planning
- Understand the importance of setting clear objectives and focusing on achieving benefits to stakeholders
- Understand the impact of risks, and be able to develop contingency plans to mitigate them effectively.
- Understand the importance of defining and measuring performance and success criteria
- Understand the challenge of balancing competing priorities, beyond the 'triple constraint' of scope, time and cost.
- Be able to apply a range of both traditional and modern project management methodologies and frameworks
- Understand the philosophies and principles underlying different project management approaches, and critically evaluate the approaches with respect to planning, people management, risk management and project delivery
- Be able to apply a broad range of scope planning, time planning, budget planning and risk planning techniques, such as Critical Path Method, Probabilistic Evaluation and Review Technique, Earned Value Analysis, Failure Modes Effects Analysis, Expected Monetary Value Analysis, Sensitivity Analysis, Work Breakdown Structure (... and many more)
- Be able to manage stakeholders, having recognised the power and influence of each stakeholder
- Work effectively with others, and realise the value of diversity within a team
- Appreciate that there is not necessarily one "correct" approach, but to be pragmatic, make critical decisions and apply common sense
- Recognise the wider applicability of project management skills and techniques beyond the course
- Work in a team to develop a 'case study' project, to develop a convincing 'project plan'
- Design and develop novel solutions, demonstrate inventiveness and effective decision making in a team environment
- Develop transferable team-work skills such as leadership, negotiation and conflict resolution.

Indicative reading list

- Project Management: A Systems Approach to Planning, Scheduling and Controlling, Harold

Kerzner, Wiley, 2017

- A guide to the project management body of knowledge (PMBOK® guide), Project Management Institute, 2017
- PRINCE 2 for beginners: from introduction to passing your foundation exam, Colin Bentley, Routledge, 2015
- Agile Project Management: A Nuts and Bolts Guide to Success, Anthony Mersino, Vitality Chicago, 2015

[View reading list on Talis Aspire](#)

Subject specific skills

- Technical skills – the module teaches broad range of techniques, methods and methodologies across various project knowledge areas
- Planning – technical skills for planning (such as scheduling, budgeting or risk planning)
- Compromise - balancing competing constraints
- Negotiation - managing stakeholder interests
- Organisation – self organisation and team organisation, time management
- Risk management – handling uncertainty, handling change
- Strategic – project approach, approach to solving problems as a team
- Interpersonal skills – managing teams, managing stakeholders

Transferable skills

- Critical Thinking – appraise and critique a range of popular methodologies and practices covering a variety of disciplines, making project specific decisions where appropriate.
- Teamwork – working together towards a common goal, handling team personalities, effective communication
- Leadership – leading others, respecting team diversity, handling conflict, effective delegation

Study

Study time

Type	Required
Lectures	20 sessions of 1 hour (13%)
Seminars	10 sessions of 1 hour (7%)
Private study	120 hours (80%)
Total	150 hours

Private study description

Background reading, Homework activities, Independently-organised group work, Revision

Costs

No further costs have been identified for this module.

Assessment

You do not need to pass all assessment components to pass the module.

Students can register for this module without taking any assessment.

Assessment group D2

	Weighting	Study time	Eligible for self-certification
Individual Report	20%		Yes (extension)
The essay will be graded by multiple peers (peer-assessed), and moderated to ensure fairness.			
Group Presentation	10%		No
Individual marks are determined by combining the team's "presentation score" with their "individual score".			
In-person Examination	70%		No
CS352 Examination			

- Answerbook Pink (12 page)
- Students may use a calculator

Assessment group R1

	Weighting	Study time	Eligible for self-certification
In-person Examination - Resit	100%		No
CS352 resit examination			

- Answerbook Pink (12 page)
- Students may use a calculator

Feedback on assessment

Individual written essays will receive detailed feedback for each chapter, with justification of overall grade awarded, both from peers and from teacher.

Mark breakdown provided from teachers and peers for group presentation (no written commentary will be provided due to timing constraints of presentation marking).

Peer appraisal will allow team members to receive anonymous written feedback from team members about their performance.

[Past exam papers for CS352](#)

Availability

Courses

This module is Core for:

- Year 4 of UCSA-G504 MEng Computer Science (with intercalated year)
- Year 3 of UCSA-G503 Undergraduate Computer Science MEng
- Year 3 of UCSA-G408 Undergraduate Computer Systems Engineering
- Year 4 of UCSA-G409 Undergraduate Computer Systems Engineering (with Intercalated Year)

This module is Optional for:

- Year 3 of UCSA-G4G1 Undergraduate Discrete Mathematics
- Year 3 of UCSA-G4G3 Undergraduate Discrete Mathematics
- Year 4 of UCSA-G4G2 Undergraduate Discrete Mathematics with Intercalated Year

This module is Option list A for:

- Year 3 of UCSA-G500 Undergraduate Computer Science
- Year 4 of UCSA-G502 Undergraduate Computer Science (with Intercalated Year)
- Year 3 of UCSA-G503 Undergraduate Computer Science MEng

This module is Option list B for:

- Year 3 of USTA-G304 Undergraduate Data Science (MSci)
- Year 4 of USTA-G303 Undergraduate Data Science (with Intercalated Year)