



BUSINESS SCHOOL  
Te Kura Pakihi

DEPARTMENT OF INFORMATION SCIENCE

**INFO 301**  
**Applied Project**

COURSE OUTLINE

Semester Two, 2018

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## Paper Description and Objective

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This course extends INFO 310 (and SENG 301), building on multiple aspects of Information Systems development, including the processes used, requirements engineering, systems modelling, architectural design and implementation, systems testing and evolution. Many of these activities will require management and planning, including the consideration of risks and the awareness of team's skills, estimation and scheduling, quality management, configuration management and continuous process reflections for improvements.

The objective of INFO 301 is for each student to:

- Be exposed to a wide range of practical and theoretical issues related to Information Systems development
- Apply this knowledge in a group situation by developing an information system for an external client
- Prepare for further study in software development (including the fourth year Information Science papers)
- Prepare to work as professional systems analysts or software developers in a wide range of application domains, giving them particular strength in commercial application development

## Student Attributes

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By completing this course you should be confident that you would be able to meet many of the requirements of a graduate in Information Science, which include but are not limited to characteristics organised into two core areas:

### 1. Personal attributes

- Eager to continue learning and open to new knowledge
- Open to innovation in thought and practice
- Able to plan and prioritise your own work
- Able to self-motivate and self-monitor
- Able to critically evaluate your own work and the work of others
- Able to exercise independent thought and judgement
- Able to find, filter, organise and synthesise and apply information from a variety of sources
- Able to bring rigorous analytical, logical and methodological skills to structured problem solving
- Able to apply current knowledge in analogous circumstances
- Willing and able to solve unstructured problems
- Creative, adaptable and flexible when faced with novel circumstances
- Ethically responsible in your actions

## 2. Interactive Attributes

- Able to work constructively as part of a team
- Able to lead others and delegate responsibility when appropriate
- Able to negotiate effectively
- Willing to consider the views of others fairly
- Able to interact effectively with people from a variety of cultures
- Able to communicate formally and informally with diverse audiences in oral, written and electronic forms

## Overview

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### Prerequisites

We assume you have a good understanding of the material presented in INFO 310. The topics covered in this papers will provide useful foundations and support for the material in INFO 301, including application development, testing, and debugging. Students who feel that their understanding of topics from INFO 310 is incomplete would benefit from spending some time reviewing their notes from this course as early as possible.

### Future Study

INFO 301 builds a solid foundation for you to study further ICT-related papers such as those offered at the 400 level.

## Teaching Staff

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### Paper Coordinator

Name: Dr Sherlock A. Licorish  
Office: OBS 7.03  
Email: sherlock.licorish@otago.ac.nz  
Office Hours: TBA

Office hours will be posted on the outside of our doors or on Blackboard. Note that office hours may change as the year progresses due to other commitments. While these are guaranteed hours of availability, you should not feel compelled to contact us only during these times: outside of office hours, you can always post your queries to Blackboard, or email us or to arrange a meeting.

## Course Delivery

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Lecture Day/Time: Tuesdays, 13:00 pm – 13:50 pm, in room OBS G.19  
Mentor Day/Time: Fridays, 9:00 am – 11:00am, in room OBS 2.24

INFO 301 uses the group projects as a focal point for learning and discussion of theoretical and practical issues – as such, *the sole source of formal course delivery is one lecture session per week*, with a duration of 50 minutes. Lecture times will largely be used to situate the theoretical aspects of the course and monitor group progress. It is important to realise that the lectures are highly interrelated, and some topics will be stressed in many lectures. This makes keeping up with the lecture material (including readings) vital if subsequent lectures are to be fully understood.

Lecture slides will be made available on Blackboard the morning of the relevant lecture. As lectures and mentor sessions are used to track and monitor project progress, *attendance is compulsory*, unless prior arrangements have been made.

You and your group will be required to meet regularly with the coordinator to discuss problems and solutions that arise during the completion of your project requirements. As part of this arrangement, relevant material will be introduced on an as-needed basis. *You are expected to review this material in a timely manner, and bring any questions that reviewing it raises to mentor meetings for further discussion.*

**Course Calendar** The course calendar (in this outline) details scheduling information. Note that this calendar may change as the course proceeds. Any changes will be announced at lectures and be detailed on Blackboard.

## Expectations and Workload

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One lecture per week (50 minutes)

One mentor session per week (20 minutes)

Independent study each week (assumed to be 5 hours)

## Course Learning Resources

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*There is no formal textbook for this course.* Relevant readings will be provided as required, usually in response to requirements and issues encountered in your group work.

That said, popular software engineering and project management texts would provide useful content for the team. Two of these texts are suggested below:

- **Software Engineering (10th ed.)**, by Ian Sommerville, Addison-Wesley, (2015).
- **Object Oriented Software Engineering – using UML, Patterns, and Java (3rd ed.)**, by Bernd Bruegge and Allen H. Dutoit, Prentice Hall, (2010).

### Blackboard

Blackboard <https://blackboard.otago.ac.nz/> provides you with access to course materials, class notices, and resources. Blackboard is used to email the whole class so it is important that you check your student email and *Blackboard* regularly. You should log in during the first week of the semester

to ensure that you can access the site. The login details for Blackboard are the same as those used for logging onto laboratory computers, namely the username, as printed on student ID cards and the chosen password from last year. For students who have not used Blackboard before, your password should have been included with the course approval mail. Students experiencing problems can contact the ITS helpdesk, by phoning 479 8888 or emailing the helpdesk at [helpdesk@otago.ac.nz](mailto:helpdesk@otago.ac.nz).

Lecture slides are posted on Blackboard. Students are strongly encouraged to print these out before the lecture if they so desire. Please note, lecture slides will not be handed out in lectures. Students are expected to make their own notes based on the material presented in the lecture and the readings.

## Student Webmail

### **IMPORTANT - DO THIS NOW:**

Forward your University email address to an email address that you use regularly as follows:

1. [Log into your StudentMail account](#) using your student username and password
2. Click **Cog button (top right corner) > Options**
3. Under **Account**, select the **Forward your email** shortcut under the **Short Cuts** menu on the right side of the screen
4. Under the Forwarding heading, type in the email address you want your email to be forwarded to. You can also choose to have a copy of these emails kept on your StudentMail account, so please check the box if you would like this
5. Click the **Start forwarding** button.

## Assessment

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Students will complete a small to medium-sized development project in groups comprising four to five members. Group selection will be based on the results of a survey conducted by the teaching staff during the first week of Semester 1. A number of assessments will be conducted around the project (see table below). Students who fail to be fully involved with their group project and these assessments are not likely to receive a pass mark in the course.

Where feasible, we encourage the students to use Open Source systems that provide different functionalities/services (such as inventory management systems, accounting/payment systems, and booking systems) for the applied project. These systems can be used as base/template systems to design/build a new system. Based on customer requirements, these systems can be altered to add/modify/remove functionalities to build the new system.

Beyond Open Source options, you are free to use any other tools which have been taught in INFO 201, INFO 202, INFO 310 and INFO 323. However, groups are reminded that all development tools or frameworks used must be appropriate for agile and iterative development. If your group decides to use a development framework, programming language, or development environment that has not been taught in any of the Information Science papers listed above, then the group will be required to justify their decision to the coordinator and demonstrate that they can use it by week 5 of the semester.

All-important assessment information such as due dates and times, content, guidelines and so on will be discussed at lectures and, where appropriate, detailed on Blackboard. *Students are responsible for ensuring that they are aware of this information, keeping track of their own progress, and catching up on any missed classes.*

### Assessment Breakdown

| Assessment  | Due date             | % of final grade |
|---|----------------------|------------------|
| Individual Oral Examination   | Week 10              | 20               |
| Evidence for: Requirements Gathering, Estimation and Schedule; Models, Architecture and Prototypes Developed; Version Management and Team Planning; Quality Management and Usability Planning; Documentation and System Packaging | Weeks 5 and 12       | 20 (10% each)    |
| Professionalism and Individual Activity Log   | Starting from Week 2 | 10               |
| Software Deliverable (including presentation)   | Week 13              | 40               |
| Team Evaluation Questionnaire   | Week 13              | 10               |

### Description of Assessments

**Individual Oral Examinations:** Individual members of each group will be examined via a formal interview process in **Week 10**. A total of **20%** is designated for this assessment component. The Individual Oral Examination will reflect both theoretical and practical aspects covered in the course, and information regarding preparation will be provided the week before the exam is conducted (Week 9).

**Evidence:** Five different forms of software project management evidence will be assessed at two different intervals, **Weeks 5** and **12**. These evidences will be derived from the development project (see below), and include: Requirements Gathering, Estimation and Schedule; Models, Architecture and Prototypes Developed; Version Management and Team Planning; Quality Management and Usability Planning; Documentation and System Packaging. Each of these aspects will be introduced during lectures, and further enforced during mentor meetings. Teams will be allowed to decide on the form and nature of the evidence they present for evaluation, relative to what is accepted in practice. Evidence will be graded out of 10% (**20%** in total) on: clarity, completeness, acceptable structure, and correct process execution.

**Professionalism and Individual Activity Log:** The teaching staff will evaluate your work and conduct from Week 2 (individually and in your groups) using the following criteria throughout the course:

- showing initiative and enthusiasm in the project, and particularly during problem solving sessions or in pursuit of project resource
- making significant contributions in project meetings (including being well prepared for meetings)
- producing deliverables that are timely and of extremely high quality
- making considerable contributions to system development and configuration
- making considerable contribution to project planning and organisation (including documentation)
- steady and punctual attendance at lectures and mentor sessions

- full participation in the project activities, including professional and timely communication with the client and other members of your team
- significant contribution towards a collegial team atmosphere
- maintaining accurate and complete activity log that is presented each week
- making other contributions recognised by the teaching staff and client that do not fall into any of the above categories

A total of **10%** is reserved for this assessment component.

**Software Deliverable (including presentation):** Throughout the year, you will be working within a group on the delivery of a system to your assigned client. The level of functionality provided, and the quality, robustness and usability of the software, will be assessed on a per-group basis, and will factor the complexity of the project, the group's overall professionalism, and the elegance of the solution that is developed.

Other criteria will be identified on a per-project basis. You, and your group, are expected to perform steady and regular work on the project throughout the semester. Sporadic attempts at completing work will be considered unprofessional, and will impact on your overall mark, regardless of success of the project.

The software deliverable will be assessed for **40%** of the course mark (including presentation), and is due in **Week 13**. The software will reflect the work of at least FIVE sprints (iterations) of development. As part of the deliverable, students will provide a packaged piece of software with appropriate setup instructions. Students will also present their software during a 20 minutes oral presentation, and submit the team's presentation slides for grading.

Staff will assess the group's ability to present the system using four criteria:

- The structure, length, and clarity of the presentation
- The ability of the group to convey concepts
- How enthusiastic and professional the group is at presenting the system
- The group's ability to explain technical aspects of the system

**Team Evaluation Questionnaire:** Each student will complete a team (group) evaluation questionnaire in **Week 13**. Student will be required to perform self-assessment and also evaluate the performance of each member in their team. The teaching staff and client(s) will also complete the questionnaire for each student, based on their observations during the course. This questionnaire is worth **10%** of the course mark. Only students that complete the questionnaire will be eligible for these marks.

**\*Note:** All group-based assessment will consider the contributions provided by each member of the group, and particularly in relation to completed activity logs and other traces provided by configuration management systems. Please be prepared to be accountable for your involvement in all group outcomes.

## Course Requirements

**Assessment Format:** Further instructions will be provided during the course, including assessment descriptors specifying formatting instructions.



**Assignment Submission Procedure:** Students are to follow submission instructions given in the assignment descriptors.

**Late Assignments and Special Consideration:** All requests for special consideration for internal assessments must be made as early as possible to the course coordinator, and will be dealt with on a case-by-case basis. Should you be unable to attend or complete *any* internal assessment component for medical or personal reasons, appropriate documentary evidence (such as a medical certificate) is required. Requests and associated documentation must be provided as early as possible so that alternate arrangements can be made. Any late requests are likely to be turned down.

**Absence policy:** Students are expected to attend all lectures and mentor sessions. In case you are not able to attend any of these sessions for pressing reasons you should inform the paper coordinator ahead of time.

**Paper Pass Requirements:** The total weighted mark over all assessment components determines your final mark for the paper. You must achieve a mark of **50%** or greater in your final mark to pass INFO 301.

### Quality Assurance

At the Otago Business School we monitor the quality of student learning and your learning experience. Your assessed work may be used for assurance of learning processes, such as evaluating the level of achievement of learning outcomes, with the aim of improving the quality of our programmes. All material used for quality assurance purposes will be treated as confidential and the outcome will not affect your grades.

## Learning Outcomes

| Learning Outcome  | Examination<br>Oral | Evidence | Professionalism | Software<br>Deliverable | Evaluation<br>Questionnaire |
|---|---------------------|----------|-----------------|-------------------------|-----------------------------|
| Be exposed to a wide range of practical and theoretical issues related to Information Systems development   | *                   | *        | *               | *                       |                             |
| Apply this knowledge in a group situation by developing an information system for an external client  |                     | *        | *               | *                       | *                           |
| Prepare for further study in software development (including the fourth year Information Science papers)  | *                   | *        |                 | *                       |                             |
| Prepare to work as professional systems analysts or software developers in a wide range of application domains, giving them particular strength in commercial application development | *                   | *        | *               | *                       | *                           |

## Grading System

The grading scheme used at Otago is:

|           |        |           |       |
|-----------|--------|-----------|-------|
| <b>A+</b> | 90-100 | <b>C+</b> | 60-64 |
| <b>A</b>  | 85-89  | <b>C</b>  | 55-59 |
| <b>A-</b> | 80-84  | <b>C-</b> | 50-54 |
| <b>B+</b> | 75-79  | <b>D</b>  | 40-49 |
| <b>B</b>  | 70-74  | <b>E</b>  | <40   |
| <b>B-</b> | 65-69  |           |       |

Results for all internal assessments will be provided electronically through Blackboard. If there are any errors or omissions regarding these, you must contact the course coordinator as soon as possible.

## Academic Integrity and Academic Misconduct (Plagiarism)

**Students should ensure that all submitted work is their own.** Plagiarism is a form of academic misconduct (cheating). It is defined as copying or paraphrasing another's work and presenting it as one's own. Any student found responsible for academic misconduct in any piece of work submitted for assessment shall be subject to the University's dishonest practice regulations, which may result in serious penalties, including forfeiture of marks for the piece of work submitted, a zero grade for the paper, or in extreme cases, exclusion from the University. The University of Otago reserves the right to use plagiarism detection tools.

Students are advised to inform themselves about University policies concerning dishonest practice and take up opportunities to improve their academic and information literacy. If necessary, seek

advice from academic staff, or the Student Learning Centre. The guideline for students is available at this link: <http://www.otago.ac.nz/study/academicintegrity/index.html>

## Course Calendar

| Lecture/<br>Mentor<br>Number | Week<br>Commencing | Topic   | Notes   |
|------------------------------|--------------------|---|---|
| 1                            | 9-Jul              | Course Introduction and Introduction to Information Systems Development       | Teaching team introduced, projects introduced, clients introduced, teams formed, projects assigned, clients emailed   |
| 2                            | 16-Jul             | Software Processes and Agile Software Development                             | Teams meet clients, feasibility assessment started, mentoring begins<br><b>Individual Activity Log</b>  |
| 3                            | 23-Jul             | Requirements Engineering, Project Estimation, Project Planning and Scheduling | Requirement documented, estimates documented, team plans documented with tentative schedule<br><b>Individual Activity Log</b>   |
| 4                            | 30-Jul             | System Modelling and Architectural Design and Software Implementation         | Architecture design initiated, models created (project dependent), system implementation (coding) started, project schedule revised<br><b>Individual Activity Log</b> |
| 5                            | 6-Aug              | Risk Management and People Management   | System implementation (coding) continue, risk management considered<br><b>Evidence Review I</b><br><b>Individual Activity Log</b>                                     |
| 6                            | 13-Aug             | Software Quality (including Usability), Measurements                          | System implementation (coding) continue, quality management considered<br><b>Individual Activity Log</b>  |
| 7                            | 20-Aug             | Configuration Management, Professionalism and Ethics                          | System implementation (coding) continue, configuration management implemented, teams working ethically<br><b>Individual Activity Log</b>                              |
| Mid-Semester Break           |                    |   |   |
| 8                            | 3-Sep              | Process Improvement and Process Retrospections                                | System implementation (coding) continue, process improvement implemented<br><b>Individual Activity Log</b>  |
| 9                            | 10-Sep             | Oral Exam Revision  | System implementation (coding) continue, preparation for oral exam<br><b>Individual Activity Log</b>  |
| 10                           | 17-Sep             | Software Testing and Documentation and System Packaging                       | System implementation (coding) continue, software testing implemented, software packaging explored<br><b>Oral Exam</b>  |

|    |        |   |  |
|----|--------|---|--|
| 11 | 24-Sep | Software Evolution and Maintenance                        | System implementation (coding) continue, evolution and maintenance taken into consideration<br><b>Individual Activity Log</b>                      |
| 12 | 1-Oct  | Release and Deployment Planning and Client Considerations | System implementation (coding) wrap-up, release and deployment planning implemented<br><b>Evidence Review II</b><br><b>Individual Activity Log</b> |
| 13 | 8-Oct  | Software Delivery and Presentation                        | <b>Software Delivery and Presentation</b><br><b>Team Evaluation Questionnaire</b><br><b>Professionalism and Individual Activity Log</b>            |

## Student Learning Support and Information

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### Student Charter

<http://www.otago.ac.nz/about/otago0005275.html>

### Guidelines for Learning at Otago

<http://hedc.otago.ac.nz/hedc/wp-content/uploads/2012/12/Guidelines-for-Learning.pdf>  
<http://hedc.otago.ac.nz/hedc/learning/>

### Student Learning Centre

The Student Learning Centre, which is part of the Higher Education Development Centre, provides learning support, free of charge, to ALL enrolled students. Their services include:

- a workshop programme designed to help students to improve their learning strategies and their generic skills
- individual assistance with learning issues
- on-line study skills advice
- a student leadership programme
- a student-led peer support programme for students of all ages and backgrounds
- conversational English groups for students from a non-English speaking background

The Centre also provides two very helpful study guides, "Guidelines for Writing and Editing" and "Writing University Assignments" and these are available on the SLC website.

<http://slc.otago.ac.nz/>

### Library Support

The Library website <http://www.otago.ac.nz/library> provides access to resources and services, including group room bookings, library hours and locations, past exam papers, subject guides, article databases and more.

If you need assistance either check out the self-help guides <http://otago.libguides.com/selfhelp>, or ask Library staff at the ground floor service desks, or email [ask.library@otago.ac.nz](mailto:ask.library@otago.ac.nz)

## **Pacific Islands' Student Academic Advisor**

Warm Pacific Greetings

Talofa lava, my name is Esmay Eteuati and my role is to liaise with Academic Departments and Student Services relating to Pacific students' and their course of study. I support both staff and students in the Business School and have a network of Pacific contacts in other Divisions around the University.

Tel +64 3 479 4756 Email: [esmay.eteuati@otago.ac.nz](mailto:esmay.eteuati@otago.ac.nz)

## **Disability Information and Support**

Students are encouraged to seek support if they are having difficulty with their studies due to disability, temporary or permanent impairment, injury or chronic illness. It is important to seek help early, through one of the contacts, or contact the departmental administrator.

## **Student Feedback**

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We encourage your feedback. This can be in the form of contacting staff, participating in course evaluation surveys and communicating with class representatives. Continual improvements will be made to this course based in part on student feedback. Recent changes to this course as a result of constructive feedback include a reduction in the number of *Evidence Reviews*. Notable also is the removal of a final examination given increased workload during the course.

### **Class Representatives**

The class (or student) representative system is an avenue for encouraging communication and consultation between staff and students. It provides you with a vehicle for communicating your views on the teaching and delivery of the paper and provides staff with an opportunity to communicate information and gain constructive feedback from students. It contributes to the development of a sense of community within a department and it adds a further dimension to the range of support services offered to students.

Volunteers for the role of class representatives will be called early in the semester. The OUSA invites all class representatives to a training session, conducted by OUSA, about what it means to be a class representative and some of the possible procedures for dealing with issues that arise. They also provide information on the services that OUSA offers and the role OUSA can play in solving problems that may occur. The OUSA provides support to class representatives during the semester. Departmental staff will also meet with class representatives during the semester to discuss general issues or matters they wish to have considered.

Your class representative's name and contact details will be posted on Blackboard early in the semester.

### **Concerns about the Course**

We hope you will feel comfortable coming to talk to us if you have a concern about the course. The Course Coordinator will be happy to discuss any concerns you may have. Alternatively, you can report your concerns to the Class Representative who will follow up with departmental staff. If, after making

approaches via these channels, you do not feel that your concerns have been addressed, there are University channels that may aid resolution. For further advice or more information on these, contact the departmental administrator or head of department.

## **Disclaimer**

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While every effort is made to ensure that the information contained in this document is accurate, it is subject to change. Changes will be notified in class and via Blackboard. Students are encouraged to check Blackboard regularly. It is the student's responsibility to be informed.