THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

BUSINESS SCHOOL

# Course Outline 2017
# INFOMGMT 192: Information Tools for Business (15 POINTS)

## Semester 2 (1175)

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## Course Prescription

The ability to manage and analyse information is essential in many aspects of business. This course provides a practical introduction to information tools used to analyse and visualise data. It introduces core programming, scripting and authoring skills that provide a foundation for the creation of information systems solutions across a range of clients including web and mobile platforms.

## Programme and Course Advice

Prerequisite: INFOSYS 110 or INFOMGMT 191
Restriction: INFOSYS 120, INFOSYS 280, COMPSCI 101, 105, 107

## Goals of the Course

- To increase the effectiveness of how business graduates use of information technology by understanding and experiencing ways of adding value to data.
- To introduce design thinking to establish the need to learn tools to solve problems
- To learn both declarative and algorithmic problem solving skills
- To provide a path to programming skills firstly via declarative tools and secondly via visual procedural languages such as Scratch leading to JavaScript and C# in Unity3D.
- To show how data can be drawn from multiple on-line sources to produce valuable analysis.
- To be of value to all business graduates who wish to increase their information literacy

## Learning Outcomes

By the end of this course it is expected that the student will be able to:

1. Identify a need create solutions to information problems by focusing on design thinking and then using appropriate tools.
2. Download and run example apps and, by reading code, making considered changes based on a design thinking process to create a benefit for a user.
3. Research and evaluate tools within the different categories to augment problem solving.
4. Use tools to create simple decision support systems.
5. Utilize online data resources integrating them with cloud and client (2D and 3D) tools.

**Content Outline (Draft)**

| Week | Lecture/ Workshop 1 | Lecture/ Workshop 2 | Lecture/ Workshop 3 | Lab | Self Study | Assessment |
|---|---|---|---|---|---|---|
| 1 | Course Introduction, Setup Trello boards | Design Thinking Introduction | Design Thinking Exercise | | HTML5 /CSS (CodeAcademy) | |
| 2 | Information Modelling, Objects and Events | Active Information Modelling with Access | Active Information Modelling Practice | Excel Basics | HTML5 /CSS | |
| 3 | Forms Design | Querying Data 1 | Querying Data 2 | Excel Macros | HTML5 /CSS | |
| 4 | Scratch Introduction | Scratch continues | Data Report Writing | Excel Analysis | JavaScript | |
| 5 | Tools for Managing Teams – Trello, Slack | Web Data using IFTT, Trello, Slack etc. | Create a Website | Excel Analysis | JavaScript | Assignment 1 |
| 6 | Information Design Principles | Information Presentation | Assignment 1 Workshop | Practise Test 1 | JavaScript | |
| 7 | Annotating Data, True Graphical UI | True Graphical UI | Unity 3D Creative Coding 1 | GitHub | Unity3D C# | Lab Test 1 |
| 8 | Unity 3D Creative Coding 2 | Unity 3D Creative Coding 4 | Unity 3D Creative Coding 5 | Azure | Unity3D C# | Assignment 2 |
| 9 | Cloud Data (Azure Easy Tables) | Creative Coding 6 | Presentation on Assignment | Unity connected to Azure 1 | Unity3D C# | |
| 10 | Assignment 3 Workshop | Future Clients - Field of View as the Computer (HoloLens) | Cloud Resources -Machine Learning | Unity connected to Azure 2 | Unity3D C# | |
| 11 | Exam Review | Exam Review | Exam Review | Practise Test 2 | | Assignment 3 |
| 12 | INFOMGMT Discussion | Revision for Test | Exam Preparation | | | Lab Test 2 |

## Learning and Teaching

This course has three lecture/workshop hours per week involving in-class activities, debate and group discussion.

In addition, there will be 2 hours of laboratory work to complete each week. The lab exercises are designed to teach the skills required to complete the assignments.

Students should spend approximately 5 additional hours per week in course-related activities. These include readings and videos related to the course content, and working on practical assignments.

## Personal Computers

Students must be prepared to bring their own computers to all classes. In Labs student will primarily use their own computers. Windows 10 is preferred. Please upgrade if you have not done so. If you have a Mac please install Windows 10 using software such as Parallels or Bootcamp.

## Languages

The emphasis of language learning in INFOMGMT192 is on reading, comprehension and modifying code.

The course begins with the visual language Scratch as the introduction of the core elements of any procedural language. With these concepts established the students take an on-line self-learning course JavaScript, the language of the web. At the same time data analysis with Excel is taught.

In the second half of the course the Unity 3D development tool is introduced. There are four primary reasons for doing this.

1. Because Unity3D has strong class and instance structure which manifest as “physical’ objects it makes learning these concepts very clear to students.
2. As the 3D interlace is a major growth area in the enterprise with the rapid the adoption of virtual, mixed and holographic displays.
3. It is fun and very visually rewarding.
4. With the basic syntax of JavaScript and C# being so close the students learn how their language skills are transferable.

## Teaching Staff

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## Learning Resources

There is no prescribed textbook or course book for this course. Online readings and videos will be assigned in class.

All course material will be available in Canvas and Trello, including lecture notes, laboratory work and links to readings and videos. There is also an online discussion forum where students can discuss course topics and seek assistance from staff and other students.

The software packages we use in the course are available to students free of charge, including the help libraries.

## Assessment

| Assessment | Course Component | Weight |
|---|---|---|
| 1 | Self-Learning (3 x 1% each) | 3% |
| 2 | Labs – artefacts developed will be assessed (10 x 1% each) | 10% |
| 3 | Workshop Activities (5 x 1% each) | 5% |
| 4 | Assignment 1 – Information Model, Access Forms and Report | 10% |
| 5 | Assignment 2 – Excel Data Analysis | 10% |
| 6 | Assignment 3 – Unity3D Cloud (Azure) Data Integration | 10% |
| 7 | Lab Test 1 | 6% |
| 9 | Lab Test 2 | 6% |
| 7 | Exam | 40% |

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|---|---|
| Coursework | 60% |
| Final Exam (2 hours) | 40% |
| Total | 100% |

Students must achieve a pass (50%) in 7 the internal coursework (Self-Learning, Assignments, Labs, Lab Tests and Workshop Activities) and the Exam separately to pass this course.