



MONASH University
Information Technology

FIT2079
Information graphics

Unit Guide

Semester 2, 2013

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FIT2079 Information graphics - Semester 2, 2013

This unit presents a diverse range of existing techniques for presenting information visually including graphs, tables, charts, diagrams, maps, time series, animations, mechanical devices and interactive software visualisations in two and three dimensions. It details the underlying principles and motivations that govern the design and implementation of these techniques in different disciplines. The unit offers students an opportunity to critically assess visual displays produced by their peers and those produced by experts in a range of domains. It also provides an opportunity for students to build upon their knowledge in their home discipline by generating visual displays of direct relevance to their study in these areas. The unit provides a strong foundation upon which students can build when interpreting and devising visual displays of information in their future studies and careers. Some of the material relies on a basic knowledge of statistics (mean, standard deviation, median) and a basic knowledge of geometry.

Mode of Delivery

Clayton (Day)

Contact Hours

2 hrs lectures/wk, 2 hrs laboratories/wk

Workload requirements

Students will be expected to spend a total of 12 hours per week during semester on this unit.

This consists of 4 hours a week in a studio-based teaching laboratory and up to an additional 8 hours for completing lab and project work, private study and revision.

Unit Relationships

Prerequisites

Completion of 24 points at first year.

Chief Examiner

Professor Kim Marriott

Campus Lecturer

Clayton

Kim Marriott

Consultation hours: Friday 11-12 or by email appointment

Academic Overview

Learning Outcomes

At the completion of this unit students will have:

- a familiarity with different approaches to presenting information visually as they have appeared throughout history and in different cultures;
- an appreciation of the application of visual media to present information in a range of academic disciplines and in the public sphere;
- a basic ability to select and apply appropriate types of visualisation and presentation;
- an ability to devise new techniques for the visual presentation of information in a discipline with which they are familiar;
- an ability to critically analyse visual information displays and data visualisations;
- an understanding of the advantages, drawbacks and pitfalls of the visual presentation of information as compared to the presentation of ideas using other media;
- an ability to engage in technical discussions on the merits of different visualisations and information displays.

Unit Schedule

Week	Activities	Assessment
0		No formal assessment or activities are undertaken in week 0
1	Introduction, origins of info graphics	Class room participation
2	Visualising the visible and the invisible	Class room participation
3	Information visualisation and GIS	Class room participation
4	Visual perception	Negotiate information visualisation project domain
5	Designing effective information graphics	Class room participation
6	Creating visualisations with R I	1st short presentation of project
7	Interactive visualisation on the web (D3)	Class room participation
8	Creating visualisations with R II	Class room participation
9	Creating visualisations with R III	Class room participation
10	Scientific and engineering visualisation	Class room participation
11	Business analytics	2nd short presentation for project
12	Accessible graphics, revision	Project report due
	SWOT VAC	No formal assessment is undertaken in SWOT VAC
	Examination period	LINK to Assessment Policy: http://policy.monash.edu.au/policy-bank/academic/education/assessment/assessment-in-coursework-policy.html

*Unit Schedule details will be maintained and communicated to you via your learning system.

Assessment Summary

Examination (2 hours): 60%; In-semester assessment: 40%

Assessment Task	Value	Due Date
Information Visualisation Project	30% (1st presentation 5%, design & implementation 10%, 2nd presentation 5%, report 10%) .	1st presentation Week 6; 2nd presentation Week 11; Report Week 12.
Classroom Contribution	10%	In various weeks throughout the semester
Examination 1	60%	To be advised

Unit Schedule

Teaching Approach

Studio teaching

Mostly the unit will employ hands-on learning where you interact with fellow students in a laboratory workroom.

There will also be some lecture style presentations to present basic material.

Assessment Requirements

Assessment Policy

Faculty Policy - Unit Assessment Hurdles

(<http://www.infotech.monash.edu.au/resources/staff/edgov/policies/assessment-examinations/unit-assessment-hu>)

Academic Integrity - Please see the Demystifying Citing and Referencing tutorial at

<http://lib.monash.edu/tutorials/citing/>

Assessment Tasks

Participation

Students will be expected to participate in discussions as part of their classroom contribution assessment.

• Assessment task 1

Title:

Information Visualisation Project

Description:

In this assignment you are to design and implement an information visualization for a domain area of your choice. The domain area must be approved by the lecturer. The assignment has three main parts:

1. Critically review the kinds of information graphics and visualisations currently being used in that and related domains and give a short 5-10 minute presentation to the class on the problem domain and current visualisations.
2. Design an information visualisation for the domain that you think is better than current approaches and implement this using either R or D3. Give a short 5-10 minute presentation to the class on your solution.
3. Write a research report of approximately 3000 words summarising your problem domain, critical review of current approaches and your solution arguing why it is an effective visualisation.

Weighting:

30% (1st presentation 5%, design & implementation 10%, 2nd presentation 5%, report 10%) .

Criteria for assessment:

Students will be assessed on a number of criteria:

- ◆ Comprehensiveness and quality of the critical review of related visualisations
- ◆ Effective use of information visualisation principles to design their visualisation
- ◆ Correctness and quality of their implementation
- ◆ Quality of the written and oral presentations

Due date:

1st presentation Week 6; 2nd presentation Week 11; Report Week 12.

Remarks:

The project application domain for each student will be decided in Week 4 based on the interests and background of the student and negotiation with the lecturer.

Assessment Requirements

• Assessment task 2

Title:

Classroom Contribution

Description:

Students will be expected to bring examples of information visualisations to the class and critically review them. They will also be expected to participate in classroom discussions.

Weighting:

10%

Criteria for assessment:

Classroom contribution will be assessed on a number of criteria:

- ◆ Application of Information Visualisation principles taught in the unit
- ◆ Quality of the critical analysis conducted
- ◆ Responding to other students comments in a constructive manner
- ◆ Frequency of contribution

Due date:

In various weeks throughout the semester

Examinations

• Examination 1

Weighting:

60%

Length:

2 hours

Type (open/closed book):

Closed book

Electronic devices allowed in the exam:

None

Learning resources

Monash Library Unit Reading List

<http://readinglists.lib.monash.edu/index.html>

Feedback to you

Types of feedback you can expect to receive in this unit are:

- Informal feedback on progress in labs/tutes
- Graded assignments with comments

Extensions and penalties

Submission must be made by the due date otherwise penalties will be enforced.

You must negotiate any extensions formally with your campus unit leader via the in-semester special consideration process: <http://www.monash.edu.au/exams/special-consideration.html>

Returning assignments

Students can expect assignments to be returned within two weeks of the submission date or after receipt, whichever is later.

Resubmission of assignments

Assignments cannot be submitted.

Assignment submission

It is a University requirement (<http://www.policy.monash.edu/policy-bank/academic/education/conduct/plagiarism-procedures.html>) for students to submit an assignment coversheet for each assessment item. Faculty Assignment coversheets can be found at <http://www.infotech.monash.edu.au/resources/student/forms/>. Please check with your Lecturer on the submission method for your assignment coversheet (e.g. attach a file to the online assignment submission, hand-in a hard copy, or use an online quiz). Please note that it is your responsibility to retain copies of your assessments.

Online submission

If Electronic Submission has been approved for your unit, please submit your work via the learning system for this unit, which you can access via links in the my.monash portal.

Examination material or equipment

Please see unit website.

Other Information

Policies

Monash has educational policies, procedures and guidelines, which are designed to ensure that staff and students are aware of the University's academic standards, and to provide advice on how they might uphold them. You can find Monash's Education Policies at:

www.policy.monash.edu.au/policy-bank/academic/education/index.html

Key educational policies include:

- Academic integrity;
<http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-academic-integrity-policy.html>
- Assessment in Coursework Programs;
<http://www.policy.monash.edu/policy-bank/academic/education/assessment/assessment-in-coursework-policy.html>
- Special Consideration;
<http://www.policy.monash.edu/policy-bank/academic/education/assessment/special-consideration-policy.html>
- Grading Scale;
<http://www.policy.monash.edu/policy-bank/academic/education/assessment/grading-scale-policy.html>
- Discipline: Student Policy;
<http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-discipline-policy.html>
- Academic Calendar and Semesters; <http://www.monash.edu.au/students/dates/>
- Orientation and Transition; <http://intranet.monash.edu.au/infotech/resources/students/orientation/>
- Academic and Administrative Complaints and Grievances Policy;
<http://www.policy.monash.edu/policy-bank/academic/education/management/complaints-grievance-policy.html>
- Code of Practice for Teaching and Learning;
<http://www.policy.monash.edu.au/policy-bank/academic/education/conduct/suppdocs/code-of-practice-teaching-and-learning.html>

Graduate Attributes Policy

<http://www.policy.monash.edu/policy-bank/academic/education/management/monash-graduate-attributes-policy.html>

Student services

The University provides many different kinds of support services for you. Contact your tutor if you need advice and see the range of services available at <http://www.monash.edu.au/students>. For Sunway see <http://www.monash.edu.my/Student-services>, and for South Africa see <http://www.monash.ac.za/current/>.

Monash University Library

The Monash University Library provides a range of services, resources and programs that enable you to save time and be more effective in your learning and research. Go to www.lib.monash.edu.au or the library tab in [my.monash](#) portal for more information. At Sunway, visit the Library and Learning Commons at <http://www.lib.monash.edu.my/>. At South Africa visit <http://www.lib.monash.ac.za/>.

Disability Liaison Unit

Students who have a disability or medical condition are welcome to contact the Disability Liaison Unit to discuss academic support services. Disability Liaison Officers (DLOs) visit all Victorian campuses on a regular basis.

Website: <http://www.monash.edu/equity-diversity/disability/index.html> Telephone: 03 9905 5704 to book an appointment with a DLO; or contact the Student Advisor, Student Community Services at 03 55146018 at Sunway Email: dlu@monash.edu Drop In: Equity and Diversity Centre, Level 1, Building 55, Clayton Campus, or Student Community Services Department, Level 2, Building 2, Monash University, Sunway Campus

Your feedback to Us

Monash is committed to excellence in education and regularly seeks feedback from students, employers and staff. One of the key formal ways students have to provide feedback is through the Student Evaluation of Teaching and Units (SETU) survey. The University's student evaluation policy requires that every unit is evaluated each year. Students are strongly encouraged to complete the surveys. The feedback is anonymous and provides the Faculty with evidence of aspects that students are satisfied and areas for improvement.

For more information on Monash's educational strategy, see:

www.monash.edu.au/about/monash-directions and on student evaluations, see:
www.policy.monash.edu/policy-bank/academic/education/quality/student-evaluation-policy.html