

**THE UNIVERSITY OF  
NEW SOUTH WALES**



**GRADUATE SCHOOL OF BIOMEDICAL ENGINEERING**

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## **COURSE INFORMATION**

This course is designed to provide an introduction to the skills and techniques required to successfully commercialise an invention or new technology. Students will be given the opportunity to further develop their understanding of the innovation and commercialisation process through group learning workshops and assignments. The skills developed will provide a basis for assessing and analysing the potential of technologies to be commercialised and providing a basic knowledge of the business planning process and pathways to commercialisation.

### **Objectives**

#### Knowledge

On completion of this course, you should understand:

- the concepts of innovation and commercialisation and their importance in research
- the psychological aspects of innovation
- the range of pathways available for the commercialisation of new technology
- the funding alternatives and legal issues relating to commercialisation

#### Skills

On completion of this course, you should be able to:

- critically evaluate the commercialisation potential of a new technology
- develop a basic business plan for the commercialisation of a new technology
- develop and apply commercialisation strategies to various new technologies.

### **Learning and Teaching Strategies**

#### (1) Workshops

With the support of mentors, course participants will work together to build on the lecture material to develop models of commercialisation and assemble market analyses of various new technologies. It is expected that these workshops will demonstrate practical approaches to the various aspects of commercialisation and encourage workshop participants to explore the application of the workshop topic to their own new technology.

(2) Workgroups

A workgroup is a semi-formal meeting of course participants with a mentor. These meetings aim to promote dialogue and discussion about various topics related to innovation and commercialisation. In the course, a learning circle will consist of about five participants meeting with a mentor to brainstorm and troubleshoot aspects of their technology.

(3) Presentations

This is a practical learning process that supports the development of presentation skills and the ability to structure a business presentation. The process involves a group working with a mentor who will observe presentations and provide participants with structured feedback.

### **Course Schedule**

The course will include seminars from successful innovators, a lecture series that covers the major components of commercialisation processes and a series of workshops designed to involve you in the development of various aspects relating to commercialisation. Additionally, two networking workshops will be included in the program to give you an opportunity to informally meet with and question successful innovators and personnel in organisations that facilitate the commercialisation of research.

#### *Keynote Speaker*

A seminar will be presented which highlights a specific success story in engineering innovation and summarises, from the inventor/developer's point of view, the major obstacles to getting the product from invention to market.

#### *Lecture Series*

A series of lectures will be delivered on the following topics:

- Introduction to the commercialisation of research
- Intellectual property and its importance in the commercialisation of research
- Elements of a business plan
- Legal issues relating to commercialisation
- Funding models for commercialisation
- The psychology of innovation
- Market analysis techniques and methodologies
- Skills for business presentations

*Workshops*

A series of workshops will be convened to discuss and expand on the following topics:

- Workshop 1 – Development of models of the commercialisation process using case studies.
- Workshop 2 - Examples of research that have been successfully commercialised
- Workshop 3 – Technology, product and market definition
- Workshop 4 – Methodologies for market analysis
- Workshop 5 – Presentations of market analyses

*Networking Workshops*

Two networking workshops will also be held to give you the opportunity to informally meet with target groups to develop networking skills and learn firsthand about successful commercialisation strategies.

- Network 1 – Attendees will include representatives from institutional stakeholders such as Unisearch, UNSW Research Office, ATPi, Sydney University Business Liaison Office, Department of State and Regional Development, AusIndustry and other organisations that facilitate the commercialisation of technology in Australia.
- Network 2 – Attendees will include representatives from ATPi based incubator companies giving the students an opportunity to discuss issues with senior managers in small start-up companies and business incubators.

Appendix 1 shows the course schedule planned for S2, 2003.

## COURSE ASSESSMENT

### Overall Rationale

The assessment of the course has been designed to measure your achievement of the learning outcomes outlined. The course will be assessed by the following methods:

1. Attendance and participation in discussions and workshops 20%
2. Report on definition of technologies and products 30%
3. Presentation of market analysis of target technology 50%

The following criteria will be applied in assessing your **workshop participation**:

- frequency of contributions
- level of analysis on discussion topics
- building on other student's comments
- providing support for other students
- ability to apply what you are learning to real life new technologies
- ability to share your experiences with and learn from other students within the course
- using other external resources

The following criteria will be applied in assessing your **written report**:

- evidence of critical understanding of the concepts developed in the course
- ability to apply these concepts to examples of new technology
- clarity of description, explanation and attention to the focus of the assignment
- capacity to structure a report logically and limit it to the length required
- degree to which the material submitted for assessment addresses the specified report requirements
- evidence of research into the theory and practice in the area

The following criteria will be applied in assessing your **presentation**:

- presentation skills including
  - use of audio visual aids
  - clarity of description, explanation and attention to the focus of the presentation
  - capacity to structure a presentation logically and limit it to the time allowed
- content of presentation including
  - evidence of application of course concepts to an example of new technology
  - degree to which the material submitted for assessment addresses the specified presentation requirements
  - evidence of research into the theory and practice in the area

**RELEVANT RESOURCES****Internet**

<http://www.uspto.gov/main/patents.htm>

<http://ep.espacenet.com/>

<http://patents1.ic.gc.ca/intro-e.html>

<http://www.delphion.com/research/>

**Reference Textbooks**

G.L Urban and J R Hauser, Design and Marketing of New Products, Second Edition, Prentice-Hall, 1993

C Golis, Enterprise and Venture Capital, Fourth Edition, Allen and Unwin, 2002.

D.G. Reinertsen, Managing the Design Factory, Free Press, 1997.

R. Burgelman, S. Wheelwright, and M. Maidique, Strategic Management of Technology & Innovation, Third Edition, McGraw Hill, 2000.

E. Geisler, The Metrics of Science and Technology, Greenwood Press, 2000

S. Shapin, The Scientific Revolution, University of Chicago Press, 1996

C. Antonelli, The Microdynamics of Technological Change, Routledge Publishers, 1999

B. Dean and J. Goldhar (Eds.), Management of Research and Innovation, North Holland, 1980.

P. Drucker, Innovation and Entrepreneurship: Practice and Principles, Harper & Row, 1986

A. Darkins and M. Cary, Telemedicine and Telehealth: Principles, Policies, Performance, and Pitfalls, Springer Publishing Company, 2000.

D. Mowery and N. Rosenberg, Paths of Innovation: Technological Change in 20th Century America, Cambridge University Press, 2000

M. Tushman and P. Anderson, Managing Strategic Innovation and Change, Oxford University Press, 1996

**ADMINISTRATIVE MATTERS**

1. Attendance at lectures and participation in workshops and learning circles is a course requirement.

2. It is very important that you read and understand the UNSW information that relates to Academic Honesty and Plagiarism. The University has a very firm policy on these issues which will be enforced during this course. More information can be found at

[http://www.studentadmin.unsw.edu.au/academiclife/assessment/academic\\_misconduct.shtml](http://www.studentadmin.unsw.edu.au/academiclife/assessment/academic_misconduct.shtml)

3. Written reports that are submitted after the due date without prior notification and permission will be subject to a deduction in marks.

4. UNSW has a wide range of student support services. You should use the resources listed below if you need help related to aspects of your overall University experience. Specific help regarding this course should be sought from the course convenor.

<http://www.student.unsw.edu.au/>

<http://www.unsw.edu.au/ServicesSearch/Services.servlet>

<http://notessrv.chan.unsw.edu.au/Faciliti.nsf/pages/security?OpenDocument>

<http://www.counselling.unsw.edu.au/>

<http://www.contact.unsw.edu.au/>

5. If you have a disability that requires some adjustment in your teaching or learning environment, you are encouraged to discuss your study needs with the course convenor prior to, or at the commencement of, the course, or with the Equity Officer (Disability) in the EADU 9385 4734. Issues to be discussed may include access to materials, signers or note-takers, the provision of services and additional exam and assessment arrangements. Early notification is essential to enable any necessary adjustments to be made.

**APPENDIX 1 COURSE SCHEDULE – S2, 2003**

<b>Date</b>	<b>Session</b>	<b>Presenter/mentor</b>
30.9.03	Keynote seminar	Professor C Sullivan
	Introduction to the commercialisation of research	Dr C Baxter
	Intellectual property and its importance in the commercialisation of research	Mr R Wulff
	Elements of a business plan	Mr M Quinn
	Workshop 1 – Development of models of the commercialisation process using case studies.	A/Prof A Simmons
	Legal issues relating to commercialisation	Mr R Sauer
	Network 1 – commercialisation partners	A/Prof A Simmons
1.10.03	Funding models for commercialisation	Ms W McKinnon
	The psychology of innovation	Ms K Singleton
	Market analysis techniques and methodologies	Dr C Lindop
	Skills for business presentations	Mr M Quinn
	Workshop 2 - Examples of research that have been successfully commercialised	Mr P Jonson
	Network 2 – incubator companies	Dr L Poole-Warren
10.10.03	Workshop 3 – Technology, product and market definition	Dr R Sharp A/Prof A Simmons
	Two workgroups each of 1 to 2 hours to be scheduled by participants in consultation with mentors	Mentors
17.10.03	Workshop 4 – Methodologies for market analysis	Dr C Lindop A/Prof A Simmons
24.10.03	Report on Technology Definition submitted	
	Two workgroups each of 1 to 2 hours to be scheduled by participants in consultation with mentors	Mentors
28.11.03	Workshop 5 – Presentations of market analyses	A/Prof A Simmons Dr L Poole-Warren