Materials Industry Management /
Topics in Business Management in Chemical Engineering

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Course Staff

<table>
<thead>
<tr>
<th>Dr Owen Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Coordinator &amp; Lecturer</td>
</tr>
<tr>
<td>Room 243, School of Materials Science and Engineering (Building E10)</td>
</tr>
<tr>
<td>Phone: 9385 4437</td>
</tr>
<tr>
<td><a href="mailto:o.standard@unsw.edu.au">o.standard@unsw.edu.au</a></td>
</tr>
<tr>
<td>Consultation hours: by appointment</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>A/Prof. Patrick Spicer</th>
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<tbody>
<tr>
<td>Lecturer</td>
</tr>
<tr>
<td>Room 810</td>
</tr>
<tr>
<td>Chemical Sciences Bldg (Building F10)</td>
</tr>
<tr>
<td><a href="mailto:p.spicer@unsw.edu.au">p.spicer@unsw.edu.au</a></td>
</tr>
<tr>
<td>Consultation hours: by appointment</td>
</tr>
</tbody>
</table>
External Presenters

- Ms Sumaya Sava, UNSW Careers & Employment
- Mr Paul Grainger, Professionals Australia
- Mr Sandeep Chandra, Deloitte Strategy & Operations
- Professor Craig Freedman, Aust. School of Business, UNSW (formerly Macquarie Uni.)
- To Be Advised, New South Innovations, UNSW

Course Objective

To provide students with a working knowledge of selected important management and business issues they will encounter in the materials engineering and chemical engineering workplace, as well as the ability to:

- Identify and specify key features pertaining to career development and professional issues for engineering graduates.
- Apply marketing and strategic business analysis principles to engineering business situations.
- Develop working understanding of economic and accounting principles and application of these to real business situations.
- Undertake project management.
- Undertake risk management and process resilience engineering.
- Understand innovation and commercialisation principles and identify opportunities for product development.

Timetable

MATS3007 Materials Industry Management and CEIC8204 Topics in Business Management in Chemical Engineering are taught together at the following time:

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Location</th>
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<tbody>
<tr>
<td>Friday</td>
<td>11:00 – 15:00</td>
<td>Central Lecture Block 3 (E19-G04)</td>
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</table>

In most weeks the class will have formal lecture and class activities in the first 3 hours only (i.e., 09:00–12:00), with the additional hour (in MATS3007) available for group work, consultation with lecturers, etc.

Course Content


Your Course at a Glance

The course is 3 hpw of formal lectures and class activities. Depending on the topic, each week will consist of management theory with opportunity to apply the theory to management practise by means of group work, report research, case studies, guest presenters, etc. The weekly schedule* for the course is given below.
<table>
<thead>
<tr>
<th>Week</th>
<th>Management Theory 11am-1pm</th>
<th>Management Practise 1pm-3pm</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Career Development – Cover Letter and Resume (SS, UNSW Careers &amp; Employment)</td>
<td>Engineering Competencies (PS)</td>
<td>Cover Letter &amp; Resume (5%)</td>
</tr>
<tr>
<td>2</td>
<td>Career Development – Interview Process (SS, UNSW Careers &amp; Employment)</td>
<td>Professional Issues for Students and Graduates (PG)</td>
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<tr>
<td>3</td>
<td>Strategic Business Analysis: Overview and Industry Perspective (SC)</td>
<td></td>
<td>Strategic Business Analysis Assignment (25%)</td>
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<tr>
<td>4</td>
<td>Strategic Business Analysis: Competitive Landscape Analysis (PS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Economics (CF)</td>
<td></td>
<td>Business Case Assignment (40%)</td>
</tr>
<tr>
<td>6</td>
<td>Economics, Financial Accounting (CF)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Risk Management (OS)</td>
<td></td>
<td>Risk Assessment (5%)</td>
</tr>
<tr>
<td>8</td>
<td>Project Management (OS)</td>
<td>Project Group Discussion</td>
<td>Project Management Plan (25%)</td>
</tr>
<tr>
<td>9</td>
<td>Project Management (OS)</td>
<td>Case Studies</td>
<td></td>
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<tr>
<td>10</td>
<td>Mid-Session Break</td>
<td></td>
<td></td>
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<tr>
<td>11</td>
<td>Public Holiday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Innovation and Commercialisation (NSi)</td>
<td></td>
<td>Business Case Assignment (40%)</td>
</tr>
<tr>
<td>13</td>
<td>Managing Technical People (PS)</td>
<td>Management Communication Exercise</td>
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</tr>
<tr>
<td>13</td>
<td>Business Case Assignment Project Group Work</td>
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</table>

*Schedule subject to change depending upon availability of external presenters

**Assessment**

<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Due Date</th>
<th>Fraction</th>
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</thead>
<tbody>
<tr>
<td>Cover Letter and Resume</td>
<td>11:55 pm Monday, Week 3</td>
<td>5%</td>
</tr>
<tr>
<td>Strategic Business Analysis Assignment</td>
<td>11:55 pm Monday, Week 7</td>
<td>25%</td>
</tr>
<tr>
<td>Risk Assessment</td>
<td>11:55 pm Monday, Week 8</td>
<td>5%</td>
</tr>
<tr>
<td>Project Management Plan</td>
<td>11:55 pm Monday, Week 10</td>
<td>25%</td>
</tr>
<tr>
<td>Business Case Assignment</td>
<td>11:55 pm Sunday, Week 13</td>
<td>40%</td>
</tr>
</tbody>
</table>
NOTE: Students are required to attend at least 80% of classes otherwise a course grade of Unsatisfactory Fail (UF) will be awarded regardless of the mark achieved.

Please refer to the UNSW guide to grades: https://student.unsw.edu.au/grades

Details of Assessment Tasks

- **Cover Letter and Resumé (Individual Work Only)**
  You are required to bring to the Career Development lecture in Week 2 your current resumé and a recent job advertisement that interests you. Following the lecture, you will revise your resume and prepare a cover letter to apply fictitiously for the job. The coverletter and resume will be submitted for assessment (to Moodle in PDF format). Specific details of the assessment task will be provided separately.

- **Strategic Business Analysis Assignment (Groups of ~5 selected by students)**
  A selection of business scenarios will be provided. Each group should choose one scenario and conduct any business analyses you consider appropriate to identify the viability of such an operation. You should make and justify a recommendation (either to proceed or not proceed). Your analyses should draw conclusions of the viability of the operation in the context of the Australian market. Specific details of the assessment task will be provided separately.

- **Risk Assessment (Individual Work Only)**
  You are required to identify a common/straightforward task and to explain its context and what is to be done, then to identify the various risks and their causes, perform a risk analysis to determine the risk rating (consequence x likelihood), and finally recommend control measures/treatments to reduce the risks to acceptable levels. Specific details of the assessment task will be provided separately.

- **Project Management Plan (Groups of ~5 assigned by course co-ordinator)**
  A selection of potential projects will be provided. Your group will select a project topic and then develop a detailed project management plan for its implementation. Specific details of the assessment task will be provided separately.

- **Business Case Assignment (Groups of ~5 selected by students)**
  Students will work in groups to research and analyse an assigned business case scenario and will submit their findings as a report of 3000+300 words. Students should divide themselves into groups of ~5 then select the particular business topic (list will be circulated separately. Names of group members and business topic should be submitted to Moodle. The Business Case Assignment is intended to utilise any/all aspects of the course material and serves to integrate understanding of the course content. Specific details of the assessment task will be provided separately.

**Marks and feedback for the Cover Letter and Resumé, Strategic Business Analysis Assignment, Risk Assessment, and Project Management Plan will be provided within 2 weeks after submission of each assessment task.** **Marks and feedback on the Business Case Assignment will be provided at the same time as the UNSW release of Semester 2 course marks.**

**Course Attendance**

Students are required to attend at least 80% of classes otherwise a course grade of Unsatisfactory Fail (UF) will be awarded regardless of the mark achieved.
References

- Articles selected by specific topic from the following serials:
  - M.J. Baker and Susan J. Hart, Marketing and Competitive Success, P. Allan, New York, 1989

Learning and Teaching Philosophy Underpinning the Course
(based on UNSW Learning Guidelines)

- Students are actively engaged in the learning process.
  It is expected that, in addition to attending classes, students will read, write, discuss, and engage in analysing the course content.

- Effective learning is supported by a climate of inquiry where students feel appropriately challenged.
  Students are expected to be challenged by the course content and to challenge their own preconceptions, knowledge, and understanding by questioning information, concepts, and approaches during class and study.

- Learning is more effective when students’ prior experience and knowledge are recognised and built on.
  Coursework, tutorials, assignments, laboratories, examinations, and other forms of learning and assessment are intended to provide students with the opportunity to cross-reference these activities in a meaningful way with their own experience and knowledge.
• *Students become more engaged in the learning process if they can see the relevance of their studies to professional and disciplinary contexts*

The course content is designed to incorporate both theoretical and practical concepts, where the latter is intended to be applicable to real-world situations and contexts.

**Course Information**

<table>
<thead>
<tr>
<th>Units of credit</th>
<th>6</th>
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<tbody>
<tr>
<td>How the course relates to other course offerings and overall program(s) in the discipline</td>
<td>The course formally introduces specific management concepts relevant to materials engineering and chemical engineering industries. It is taught within the context of these industries and utilises numerous examples from them.</td>
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</tbody>
</table>
| Graduate attributes which will be gained through the course | | • Ability to communicate effectively  
• Capacity for creativity and innovation  
• Ability to manage information and documentation  
• Understanding of professional and ethical responsibilities, and commitment to them  
• Ability to function effectively as an individual  
• Ability to work effectively in multidisciplinary and multicultural teams  
• Capacity for lifelong learning & professional development  
• Professional attitudes |
| Expected learning outcomes | In doing this course, you will learn:  
• Risk management and resilience engineering  
• Micro-economics, micro-economics, & accounting  
• Project management  
• Strategic business analysis and marketing  
• People management issues & personal career planning |
| Teaching strategies | • Basic theoretical concepts will be covered in lectures.  
• Students are expected to discuss the application of concepts in class discussions.  
• Individual reports on Risk Management and Cover Letter & Résumé.  
• In-depth research reports prepared by students in groups for strategic business analysis, project management plan and business case assessment tasks.  
• Teaching material, including course outline, notes, problems, assignments, case studies and course announcements are available on the Course Moodle website. |

1. *Based on the professional attributes given in Engineers Australia National Generic Competency Standards - Stage 1 Competency Standard for Professional Engineers and UNSW Graduate Attributes.*

**Academic Honesty and Plagiarism**

**What is Plagiarism?**

All details regarding plagiarism can be found here: [https://student.unsw.edu.au/plagiarism](https://student.unsw.edu.au/plagiarism)
It is important to understand what plagiarism is. The general concept is plagiarism is using the words or ideas of others and passing them off as your own. Examples of plagiarism, including self-plagiarism, are:

- **Copying**
  Using the same or very similar words to the original text or idea without acknowledging the source or using quotation marks. This includes copying materials, ideas or concepts from a book, article, report or other written document, presentation, composition, artwork, design, drawing, circuitry, computer program or software, website, internet, other electronic resource, or another person's assignment, without appropriate acknowledgement.

- **Inappropriate paraphrasing**
  Changing a few words and phrases while mostly retaining the original structure and/or progression of ideas of the original, and information without acknowledgement.
  This also applies in presentations where someone paraphrases another's ideas or words without credit and to piecing together quotes and paraphrases into a new whole, without appropriate referencing.

- **Collusion**
  Presenting work as independent work when it has been produced in whole or part in collusion with other people. Collusion includes,
  - students providing their work to another student before the due date, or for the purpose of them plagiarising at any time
  - paying another person to perform an academic task and passing it off as your own
  - stealing or acquiring another person’s academic work and copying it
  - offering to complete another person’s work or seeking payment for completing academic work.

  This should not be confused with academic collaboration.

- **Inappropriate citation**
  Citing sources which have not been read, without acknowledging the 'secondary' source from which knowledge of them has been obtained.

- **Self-plagiarism**
  ‘Self-plagiarism’ occurs where an author republishes their own previously written work and presents it as new findings without referencing the earlier work, either in its entirety or partially.

  Self-plagiarism is also referred to as 'recycling', 'duplication', or 'multiple submissions of research findings' without disclosure. In the student context, self-plagiarism includes re-using parts of, or all of, a body of work that has already been submitted for assessment without proper citation.

  The Learning Centre also provides substantial educational written materials, workshops, and tutorials to aid students, for example, in:
  - correct referencing practices;
  - paraphrasing, summarising, essay writing, and time management;
  - appropriate use of, and attribution for, a range of materials including text, images, formulae and concepts.

  Individual assistance is available on request from The Learning Centre.

  Students are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow
sufficient time for research, drafting, and the proper referencing of sources in preparing all assessment items.

Continual Course Improvement

- At the end of the course, students will be asked to provide evaluative feedback through myExperience, the University’s course and teaching evaluation and improvement process.
- Students are encouraged to address any problems regarding teaching of this course at the annual staff-student meeting.
- Student comments on teaching during the session are welcome and will be appreciated.
- At times students may be asked to answer a short questionnaire for feedback on the course.

Administrative Matters

- Students should attend at least 80% of all classes.
- Students unable to submit assignments on time or attend the mid-session quizzes or final exams on health grounds should make a request for special consideration. Information on this process can be found here: [https://student.unsw.edu.au/special-consideration](https://student.unsw.edu.au/special-consideration). Medical certificates or other appropriate documents must be included. Students should also advise the lecturer of the situation.
- Unless otherwise specified in the task criteria, all assignments must be uploaded via Moodle prior to the due date for submission.
- Assignments/lab reports submitted after the due date for submission will receive a 10% of maximum grade penalty for every day late, or part thereof.
- Students who have a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the course coordinator prior to, or at the commencement of, their course, or with the Equity Officer (Disability) in the Equity and Diversity Unit: [https://student.unsw.edu.au/disability](https://student.unsw.edu.au/disability). Early notification is essential to enable any necessary adjustments to be made.

Rules for Exams

Rules governing conduct during exams are given at: [https://student.unsw.edu.au/exam-rules](https://student.unsw.edu.au/exam-rules)