Unit Outline

302269 Risk Management 421

Semester 1, 2013

Unit study package number:	302269
Mode of study:	Internal
Tuition pattern summary:	Lecture: 1 x 2 Hours Weekly Workshop: 1 x 3 Hours Weekly This unit does not have a fieldwork component.
Credit Value:	25.0
Pre-requisite units:	307668 (v.0) Process Instrumentation and Control 328 or any previous version
Co-requisite units:	Nil
Anti-requisite units:	302201 (v.0) Risk Management 541 or any previous version
Result type:	Grade/Mark
Approved incidental fees:	Information about approved incidental fees can be obtained from our website. Visit fees.curtin.edu.au/incidental_fees.cfm for details.
Unit coordinator:	**Name:** Nicoleta Maynard **Phone:** +618 9266 2683 **Email:** N.Maynard@curtin.edu.au **Building:** 204 **Room:** 515 **Consultation times:** By appointment, via email
Teaching Staff:	**Name:** Nicoleta Maynard **Phone:** +618 9266 2683 **Email:** N.Maynard@curtin.edu.au **Building:** 204 **Room:** 515 **Name:** Sven Colic **Email:** s.colic@curtin.edu.au
Administrative contact:	**Name:** Sven Colic **Email:** s.colic@curtin.edu.au
Learning Management System:	Blackboard (lms.curtin.edu.au)

Acknowledgement of Country

We respectfully acknowledge the Indigenous Elders, custodians, their descendants and kin of this land past and present.

Syllabus

Risk management. Accident sources, consequences and preventative action. Personnel health and safety. Process safety analysis. Loss prevention. Process safety in design. Process safety in operations. Defining and quantifying risk. Checklists. Harzard and operability analysis (HAZOP) studies. Hazard analysis (HAZAN) techniques. Human factors. Linking HAZOP, process control, instrumentation and alarm systems. Cost of plant safety. Environmental impact. Case studies of serious plant accidents.

Introduction

This unit is taught is a non-traditional style, emphasising the concepts of problem based learning and active learning. The development of professional skills, such as communication and systems thinking, are also a focus of this unit. The main weekly activities will be round-table discussions, debates, group work and presentations.

The learning outcomes are adopted and aligned with some of the specific objectives of the CDIO Syllabus. CDIO stands for Conceive-Design-Implement-Operate and it is an engineering education framework establish by MIT and recently adopted in the Chemical Engineering curriculum at Curtin University.

Learning Outcomes

	On successful completion of this unit students can:	Graduate Attributes addressed
1	Apply discipline knowledge, principles and concepts of risk management	
2	Think critically, creatively and reflectively in the area of process systems risk management	
3	Communicate effectively while solving risk management problems	
4	Reflect on the development of skills (professional practice)	

Curtin's Graduate Attributes

	Apply discipline knowledge		Thinking skills (use analytical skills to solve problems)		Information skills (confidence to investigate new ideas)
	Communication skills		Technology skills		Learning how to learn (apply principles learnt to new situations) (confidence to tackle unfamiliar problems)
	International perspective (value the perspectives of others)		Cultural understanding (value the perspectives of others)		Professional Skills (work independently and as a team) (plan own work)
Find out more about Curtin's Graduate attributes at the Office of Teaching & Learning website: otl.curtin.edu.au					

Learning Activities

Student-centered/Problem based learning type activities: case studies, group discussions, reflective journal, presentations and mentoring sessions.

Each week the designated workshop period will be divided into 3 distinct activities:

- In-class discussions on the homework problem (Food for Thought) & In-class problem solving
- Presentation of the in-cass problem, questions and feedback on thinking critically and communicate effectively learning outcomes.
- Discussions, debates etc.

The lecture will be available online, in 15-20 minutes of video recordings.

The designated lecture period will be used by students to work and research on the homework problem. Exceptions are:

- Weeks 4, 8 and 12 when the students will undertake the tests.

Learning Resources

Recommended Texts

You do not have to purchase the following textbooks but you may like to refer to them.

- *Skelton, Bob: "Process Safety Analysis: An introduction"*, Rugby, Warwickshire: Institution of Chemical Engineers, 1997, available in Curtin Bookshop and in the Reserve Library.
- *Cameron I. and Raman R. "Process Systems Risk Management"*, Elsevier, Process Systems Engineering Series, no.6.
- *Lee's Loss prevention in the process industries: hazard identification, assessment and control*, 3rd ed. / edited by Sam Mannan, 2005, free electronic resource at Curtin's Library website.

Other Resources

Specialist Journals: Process Safety Progress (AIChE, USA), Process Safety and Environmental Protection (IChemE, UK), Journal of Loss Prevention in the Process Industries (Elsevier), Chemical Engineering Progress (AIChemE), Computer and Chemical Engineering (Elsevier), Process Engineering (UK) etc.

Assessment

Assessment Schedule

	Task	Value %	Date Due	Unit Learning Outcome(s) Assessed
1	Portfolio	45 percent	**Week:** On going	1,4,5
2	Test 1	15 percent	**Week:** Week 4 **Day:** Wednesday **Time:** 18:00	1,2,3
3	Test 2	15 percent	**Week:** Week 10 **Day:** Wednesday **Time:** 18:00	1,2,3
4	Project	25 percent	**Week:** Week 14 **Day:** Friday **Time:** 17:00	1,2,3,4,5

Detailed information on assessment tasks

1. The following assessments are included in the Portfolio assessment:
    1. **Homework sheets – weekly, worth: 15%**
        1. Each student is required to submit his/her homework work in a folder, as part of his/her portfolio. The homework sheets are informal (handwriting, typed, diagram etc.) but must show the student's effort and study in order to solve/research the homework task. The homework sheets will be assessed and collected weekly, at the end of each session.
    2. **Presentations – in class, weekly, worth: 10%**
        1. Each group will present several times in front of peer groups and at least twice in front of the class. The presentations will be on topics discussed during the workshop. Both lecturers and peers will give feedback on presentation skills. A marking guidline is provided on Blackboard.
    3. **Reflective Journal – three journals, online submission, worth: 20%**
        1. Three debates will be conducted during the semester: *Safety and Society*, *Safety and Ethics* and *Safety Culture*. The key idea for the debates is to engage the thematic topic systemically, meaning, to look at what is our current understanding of the topic, and how we can improve that understanding further. Discussion will be the chief means of sharing viewpoints. The purpose of these discussions will be to learn, develop and improve the students ability to inquire systemically about a topic; to see relationships, and interconnections between world events, phenomena, and actions and behaviours of individuals, communities, organisations, societies, and even nations. At the end of each session, the students will be asked to write a reflective journal related to the topic discussed.
2. The test will cover all the material discussed during weeks 1,2 and 3.
3. The test will cover all the material discussed during weeks 4, 6, 7 and 9.
4. The project will be done individually and will cover all the material discussed and presented during the semester.

Fair assessment through moderation

Moderation describes a quality assurance process to ensure that assessments are appropriate to the learning outcomes, and that student work is evaluated consistently by assessors. Minimum standards for the moderation of assessment are described in the Assessment Manual, available from
policies.curtin.edu.au/policies/teachingandlearning.cfm

Late Assessment Policy

This ensures that the requirements for submission of assignments and other work to be assessed are fair, transparent, equitable, and that penalties are consistently applied.

1. All assessments which students are required to submit will have a due date and time specified on the Unit Outline.
2. Accepting late submission of assignments or other work will be determined by the unit coordinator or Head of School and will be specified on the Unit Outline.
3. If late submission of assignments or other work is not accepted, students will receive a penalty of 100% after the due date and time ie a zero mark for the late assessment.
4. If late submission of assignments or other work is accepted, students will be penalised by ten percent per calendar day for a late assessment submission (eg a mark equivalent to 10% of the total allocated for the assessment will be deducted from the marked value for every day that the assessment is late). This means that an assignment worth 20 will have two marks deducted per calendar day late. Hence if it was handed in three calendar days late and marked as 12/20, the student would receive 6/20. An assessment **more than seven calendar days overdue will not be marked**. Work submitted after this time (due date plus seven days) may result in a Fail - Incomplete (F-IN) grade being awarded for the unit.

Pass requirements

All assessments must be attempted and a minimum of 50% must be achieved overall.

Failure to attempt one of the tests will result in getting an average mark between your lowest and your highest test performance mark, provided a medical certificate is shown, otherwise, the test mark will be zero.

Referencing style

Students should use the APA 6th Ed referencing style when preparing assignments.

More information can be found on this style from the Library web site: library.curtin.edu.au.

Plagiarism

Plagiarism occurs when work or property of another person is presented as one's own, without appropriate acknowledgement or referencing. Plagiarism is a serious offence. For more information refer to academicintegrity.curtin.edu.au.

Plagiarism Monitoring

Work submitted may be subjected to a plagiarism detection process, which may include the use of systems such as 'Turnitin'. For further information, see academicintegrity.curtin.edu.au/students/turnitin.cfm.

Additional information

Enrolment:

It is your responsibility to ensure that your enrolment is correct - you can check your enrolment through the eStudent option on OASIS, where you can also print an Enrolment Advice.

Supplementary/Deferred Exams:

Supplementary and deferred examinations will be held at a date to be advised. Notification to students will be made after the Board of Examiners meeting via the Official Communications Channel (OCC) in OASIS. It is the student's responsibility to check their OASIS account on a weekly basis for official Curtin correspondence. If your results show that you have been awarded a supplementary or deferred exam you should immediately check your OASIS email for details.

Student Rights and Responsibilities

It is the responsibility of every student to be aware of all relevant legislation, policies and procedures relating to their rights and responsibilities as a student. These include:

- the Student Charter
- the University's Guiding Ethical Principles
- the University's policy and statements on plagiarism and academic integrity
- copyright principles and responsibilities
- the University's policies on appropriate use of software and computer facilities

Information on all these things is available through the University's "Student Rights and Responsibilities website at: students.curtin.edu.au/rights.

Disability

Students with a disability or medical condition (e.g. mental health condition, chronic illness, physical or sensory disability, learning disability) are encouraged to seek advice from Disability Services www.disability.curtin.edu.au. A Disability Advisor will work with you and liaise with staff to identify strategies to assist you to meet unit (including fieldwork education) and course requirements, where possible. It is important to note that the staff of the university may not be able to meet your needs if they are not informed of your individual circumstances.

Recent unit changes

We welcome feedback as one way to keep improving this unit. Students are encouraged to provide unit feedback through ***eVALUate***, Curtin's online student feedback system (see evaluate.curtin.edu.au/info/). Recent changes to this unit include:

The feedback for this unit has been very good. We have, however, changed few assessments based on students' suggestions:

- the reflective journals are now done 'in the context' and only three times a semester as opposed to weekly;
- the feedback that students are provided to their peers during the weekly presentations are now in the form of 'START-STOP-CONTINUE" as opposed to a rubric format;

The one hour face-to face lecture has been replaced to a set of online videos, in order to align with the new Curtin's vision and strategy.

	See evaluate.curtin.edu.au to find out when you can ***eVALUate*** this unit.

Program calendar

A program calendar will be provided during the workshops.