ENGR90017 Risk and Safety Management

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2010, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus.
Time Commitment:	Contact Hours: One 1 hour lecture + one 2 hour practical weekly Total 36 hours Total Time Commitment: 144 hours (including non-contact time).
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	Students undertaking this subject will be expected to be competent in the use of Microsoft Excel or alternative spreadsheet software.
Non Allowed Subjects:	None
Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website: http://www.services.unimelb.edu.au/disability/
Coordinator:	Prof Ian Johnston
Contact:	Melbourne School of Engineering Office Building 173, Grattan Street The University of Melbourne VIC 3010 Australia General telephone enquiries + 61 3 8344 6703 + 61 3 8344 6507 Facsimiles + 61 3 9349 2182 + 61 3 8344 7707 Email **eng-info@unimelb.edu.au (mailto:eng-info@unimelb.edu.au)**
Subject Overview:	This course examines the fundamentals of risk and safety management, risk management concepts such as losses, hazards & risks, controls/barriers, risk analysis & assessment techniques. It also examines risk management systems, auditing & incident investigation tools and case studies. Course topics will include; • Safety management in Mining (Underground and open pit); • Hazard identification, hazard and risk analyses, management techniques, safety audits and reporting; • HAZOP (Hazard and Operability) management and maintenance of change risk analysis; • Mining personnel approach to mine safety; • Safety training for mine personnel ; • Incident/Accident and injury investigation methods (ICAM) and report/recovery; • Cost benefit analysis for decision making process; • Ergonomics and safety engineering; • Prevention of injury eg Loss time injury; • Work stress; • Environmental impacts; • Monitoring and protection;

	• Personal protective equipment; • State and federal Mining legislations; comparison of Australian and international mining legislations; • Safety policies and programs and action plans; • Safety statistics to date; • Case studies. A formal loss control program is closely related to risk management within mining operations and will be reviewed together with identification of management strategies to deal with such losses and reduce the likelihood of accidents and their severities. It will look at simple hazard control management to a large scale management planning. This course will draw on experience, techniques and standards applied in other industries and case studies.
Objectives:	On completion of this subject, the students should have developed the skills and knowledge for risk identification, risk analysis, risk reduction or elimination and to apply them to practical mining environment to minimise the likelihood of accidents. Specifically, they should have a solid understanding of all the risk management functions including: • Risk identification; • Risk analysis; • Risk reduction or elimination; • Risk financing; • Process administration.
Assessment:	• Formally supervised written examination - 3 hours 50% (end of semester). • Homework assignments 50% (at regular intervals during the semester).
Prescribed Texts:	N.S.W. Department of Minerals Resources – Risk Management Handbook for the Mining Industry, MDG 1010, 1997.M. Karmis – Mine Health and Safety Management, SME, 2001.
Recommended Texts:	SME – Mining Engineering Handbook, 1992.
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	On completion of this subject, the students should have developed: • Analytical, critical and creative thinking, with an aptitude for continued self-directed learning. • Sense of intellectual curiosity. • Ability to interpret data and research results. • Sense of intellectual integrity and ethics of scholarship. • Writing, problem-solving and communication skills. • Ability to learn in a range of ways, including through information and communication technologies. • Capacity to confront unfamiliar problems. • Ability to develop models of practical applications and evaluate their performance by rigorous analytical means and by programming computer simulations. • Ability to evaluate and synthesise the research and professional literature. • Capacity to manage competing demands on time, including self-directed project work. • Skills for hazard/ risk identification especially in planning stages (Proactive). This is essential for continuous improvement. • Skills to analyse understand and interpret the risk. This will help management prioritize areas that should be targets for greatest improvement. • Skills to evaluate the risk and determine which potential losses and events will be addressed and in what order of priority. • Risk investigation and reporting skills. • Risk management and safety audit skills.
Notes:	Students will need access to PC/laptop.
Related Course(s):	Graduate Certificate in Engineering (Environmental Engineering) Master of Engineering Project Management Master of Engineering Project Management Master of Mining Engineering

	Postgraduate Certificate in Engineering