

### Subject Description Form

<b>Subject Code</b>	CSE40444
<b>Subject Title</b>	Risk Management
<b>Credit Value</b>	3
<b>Level</b>	4
<b>Pre-requisite/ Co-requisite/ Exclusion</b>	Nil
<b>Objectives</b>	To provide students with knowledge of risk quantification and modelling, in the risk assessment and management process, when integrating various issues including perceptions, communication, and cost-effectiveness.
<b>Intended Learning Outcomes</b>	<p>Upon completion of the subject, students will be able to:</p> <ul style="list-style-type: none"> <li>a) demonstrate a basic knowledge of the concepts of risk, recognize risk management as a key business function, and organize and make use of information from multiple disciplines;</li> <li>b) define the role of risk management in the context of occupational safety and health, and formulate effective risk control strategies;</li> <li>c) conduct risk assessments and construct probability distributions based on available information;</li> <li>d) quantify risk exposure, develop and apply dose/response functions, and address uncertainty and variability, when evaluating the risks to provide a basis for decision-making;</li> <li>e) define the role of insurance in the context of risk management; and</li> <li>f) understand the capabilities and limitations of risk assessments, identify the objectives of risk communication, and develop effective risk communication strategies and emergency plans.</li> </ul>
<b>Subject Synopsis/ Indicative Syllabus</b>	<ol style="list-style-type: none"> <li>1. <u>Introduction to Risk</u> A comprehensive definition of risk. Concept of certainty, uncertainty and risk. Types of risk (hazard risks, control risks and opportunity risks).</li> <li>2. <u>Holistic Risk Management</u> Styles of risk management: hazard management, control management, opportunity management. Model of the business cycle; embedding risk management into the business cycle.</li> <li>3. <u>Risk Perceptions and Human Behaviour</u> Introduction to behavioural safety. Risk perception, risk acceptance and risk preparedness. Safety culture. Change management.</li> </ol>



	<p>Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:</p> <p>For continuous assessment, the students are assessed in the form of quizzes through problem-solving, as well as assignments where students will submit short essays and make presentations to reflect their understanding of the module through case studies and short projects.</p> <p>A written examination is used to test the understanding/ application of principles related to Outcomes a to f.</p> <p><b>Students must attain at least a grade of D in both coursework and the final examination (wherever applicable) in order to attain a passing grade in the overall result.</b></p>												
<p><b>Student Study Effort Required</b></p>	<table border="1"> <tr> <td colspan="2" data-bbox="480 674 1476 741"><b>Class Contact</b></td> </tr> <tr> <td data-bbox="480 741 1117 797">▪ Lecture</td> <td data-bbox="1117 741 1476 797">26 Hrs.</td> </tr> <tr> <td data-bbox="480 797 1117 853">▪ Tutorial</td> <td data-bbox="1117 797 1476 853">13 Hrs.</td> </tr> <tr> <td colspan="2" data-bbox="480 853 1476 909"><b>Other Study Effort</b></td> </tr> <tr> <td data-bbox="480 909 1117 965">▪ Coursework</td> <td data-bbox="1117 909 1476 965">18 Hrs.</td> </tr> <tr> <td data-bbox="480 965 1117 1032"><b>Total Study Effort</b></td> <td data-bbox="1117 965 1476 1032"><b>57 Hrs.</b></td> </tr> </table>	<b>Class Contact</b>		▪ Lecture	26 Hrs.	▪ Tutorial	13 Hrs.	<b>Other Study Effort</b>		▪ Coursework	18 Hrs.	<b>Total Study Effort</b>	<b>57 Hrs.</b>
<b>Class Contact</b>													
▪ Lecture	26 Hrs.												
▪ Tutorial	13 Hrs.												
<b>Other Study Effort</b>													
▪ Coursework	18 Hrs.												
<b>Total Study Effort</b>	<b>57 Hrs.</b>												
<p><b>Reading List and References</b></p>	<p><b>Essential Textbook:</b></p> <ol style="list-style-type: none"> <li data-bbox="496 1160 1433 1193">1. Aven, T., 2012. “Foundations of Risk Analysis”, 2<sup>nd</sup> Edition, Wiley.</li> <li data-bbox="496 1198 1433 1265">2. Zio, E., 2007. “An Introduction to the Basics of Reliability and Risk Analysis”, World Scientific.</li> </ol> <p><b>Reference Textbooks:</b></p> <ol style="list-style-type: none"> <li data-bbox="496 1384 1412 1451">1. AS ISO 31000:2018, “Risk Management - Guidelines ”, Standards Australia</li> <li data-bbox="496 1496 1433 1563">2. BS ISO 45001:2018, “Occupational Health and Safety Management Systems”, British Standards Institution, BSI</li> <li data-bbox="496 1608 1390 1675">3. Brauer, R L 2016, “Safety and Health for Engineers”, 3<sup>rd</sup> edition, Wiley</li> <li data-bbox="496 1720 1444 1787">4. Dickson, G.C.A, 2003, “Risk Analysis”, 3<sup>rd</sup> edition, Witherby &amp; Co. Ltd.</li> <li data-bbox="496 1843 1444 1910">5. Hopkin, P., 2002, “Holistic Risk Management in Practice’, Witherby &amp; Co. Ltd.</li> </ol>												