

### Subject Description Form

<b>Subject Code</b>	CSE40445
<b>Subject Title</b>	Safety Management and Audit
<b>Credit Value</b>	3
<b>Level</b>	4
<b>Pre-requisite</b>	CSE374
<b>Objectives</b>	To help students understand the organizational needs and identify the key areas of concern and barriers to effective implementation of safety management systems.
<b>Intended Learning Outcomes</b>	Upon completion of the subject, students will be able to:  a. apply sound management principles and good practices for managing safety at work in a complex, dynamic working environment;  b. design and develop a safety management system consisting of the key safety management functions, essential process elements and implementation strategies;  c. have a basic knowledge of the objectives of a formal audit, and its implementation in accordance with the underlying principles and legislative requirements; and  d. exercise professional judgment and propose methods of improvement based on the audit findings.
<b>Subject Synopsis/ Indicative Syllabus</b>	<ol style="list-style-type: none"><li>1. <u>Introduction to Safety Management</u>  Trends and career development in safety and health management. Legal requirements and liability. Introduction to safety management systems, international standards, codes of practice.</li> <li>2. <u>Policy and Objectives</u>  Purpose, concepts and principles of safety and health management. Risk-based approach vs. performance-based approach. Formulation of safety and health policy. Safety goals and performance targets in policy design and development. Barriers to the development of effective policies.</li> <li>3. <u>Safety Management Functions and Key Process Elements</u></li></ol>

	<p>Concept of “Plan-Do-Check-Act” continuous improvement cycle. Key functions and essential process elements of an effective safety and health management system. Framework of safety and health management.</p> <p>4. <u>Measurement and Monitoring of Safety Performance</u></p> <p>Setting of performance standards and criteria. Positive and negative performance indicators, their advantages and disadvantages. Measurement of safety performance. Techniques for monitoring performance.</p> <p>5. <u>Planning and Implementation</u></p> <p>Development and implementation of systems, health &amp; safety plans, guidelines and procedures. Implementation strategies, barriers and constraints. Key drivers of a successful safety and health management programme. Managing organizational change.</p> <p>6. <u>Safety Culture</u></p> <p>Elements of safety culture and its relationship with leadership and worker participation. Different stages, indicators and measurement of safety culture.</p> <p>7. <u>Audit Fundamentals</u></p> <p>Audit as a process element of Safety Management. Defining the roles of safety audit and review. Ethics issues. Purposes and principles. Relationship between audit and performance standards / indicators. Audit methods, procedures and techniques. Audit plans. Data collection and analysis. Interview techniques.</p> <p>8. <u>Audit Systems</u></p> <p>International safety and health audit systems, standards, or specifications. Gap analysis – identification of strengths, weakness and areas for improvement.</p> <p>9. <u>Audit Reports and Related Issues</u></p> <p>Writing of audit reports, purpose and principles. Understanding relationship between recommendations and “best practices”. Effective use of review / audit findings to improve safety performance.</p>
<p><b>Teaching/ Learning Methodology</b></p>	<p>A combination of group discussions, assignments and case studies will be used to develop students’ understanding of the purpose, principles and the related professional practices. By relating the lecture materials</p>

	with case studies, examples and best practices, students will be able to develop the necessary knowledge and skills for the planning, implementation and review/audit of a safety and health management system.																																													
<b>Assessment Methods in Alignment with Intended Learning Outcomes</b>	<table border="1"> <thead> <tr> <th rowspan="2">Assessment Methods</th> <th rowspan="2">Weighting (%)</th> <th colspan="4">Intended Learning Outcomes Assessed</th> </tr> <tr> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>1. Test/ Quizzes</td> <td>10</td> <td>✓</td> <td>✓</td> <td></td> <td></td> </tr> <tr> <td>2. Case Study/ Audit Plan</td> <td>5</td> <td>✓</td> <td>✓</td> <td></td> <td></td> </tr> <tr> <td>3. Audit Report and Presentation</td> <td>25</td> <td></td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>4. Examination</td> <td>60</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Total</td> <td>100</td> <td colspan="4"></td> </tr> </tbody> </table>						Assessment Methods	Weighting (%)	Intended Learning Outcomes Assessed				a	b	c	d	1. Test/ Quizzes	10	✓	✓			2. Case Study/ Audit Plan	5	✓	✓			3. Audit Report and Presentation	25		✓	✓	✓	4. Examination	60	✓	✓	✓	✓	Total	100				
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Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:																																														
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<ul style="list-style-type: none"> <li>In order to achieve Outcomes a and b, test/ quizzes are used to test student understanding. In order to achieve Outcomes c and d, students are required to analyze a case scenario and compile an audit report.</li> </ul>																																														
Written examination is to test the student understanding and the application of principles related to all the learning outcomes.																																														
<b>Students must attain at least grade D in both coursework and final examination (whenever applicable) in order to attain a passing grade in the overall result.</b>																																														
<b>Student Study Effort Required</b>	<b>Class contact</b>				Average hours per week																																									
	<ul style="list-style-type: none"> <li>Lectures/ Tutorials</li> </ul>				3 Hrs.																																									
	<b>Other student study effort</b>																																													
	<ul style="list-style-type: none"> <li>Coursework</li> </ul>				2.8 Hrs.																																									
	<ul style="list-style-type: none"> <li>Self Study</li> </ul>				3.2 Hrs.																																									

	<b>Total student study effort</b>	<b>9 Hrs.</b>
<b>Reading List and References</b>	<p><b>Essential Textbook:</b></p> <p>Roughton, J.E., Mercurio, J.J. &amp; Heinemann, B., 2002, <i>Developing an Effective Safety Culture: A Leadership Approach</i>, Butterworth-Heinemann.</p> <p><b>Reference Textbooks:</b></p> <ol style="list-style-type: none"> <li>1. Stewart, J.M., 2002, <i>Managing for World Class Safety</i>, Wiley.</li> <li>2. Asfahl, C. Ray &amp; Rieske, David W., 2009, <i>Industrial Safety and Health Management</i>, 6th edition, Prentice Hall.</li> </ol>	