

Subject Description Form

Subject Code	COMP431
Subject Title	Business Process and Workflow Management
Credit Value	3
Level	4
Pre-requisite / Co-requisite/ Exclusion	Pre-requisite/Co-requisite/Exclusion: Nil
Objectives	<ul style="list-style-type: none"> • To present a process-oriented view to business modeling and the application of workflow technologies to business process engineering. • To equip students with the fundamental knowledge of workflow management systems.
Intended Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <p><i>Professional/academic knowledge and skills</i></p> <p>(a) understand the role of business processes in modern enterprises;</p> <p>(b) understand the basic steps in business process engineering/re-engineering;</p> <p>(c) understand the application of workflow technologies to process modeling and implementation;</p> <p>(d) understand the building blocks of a workflow management system;</p> <p>(e) understand the existing industrial workflow standards;</p> <p>(f) apply workflow technologies to solve business problems;</p> <p><i>Attributes for all-roundedness</i></p> <p>(g) improve presentation and communication skills (through case study presentations);</p> <p>(h) learn independently and to find/integrate information from different sources required in solving real-life problems.</p> <p>Alignment of Programme Outcomes:</p> <p>Programme Outcome 1: This subject contributes to having students practice their presentation and writing skills with project presentation, project document and report writing.</p> <p>Program Outcome 2: This subject shows the factors that can affect the way computing systems are developed and used.</p>

	<p>Programme Outcome 3: This subject teaches some of the elements of the ethical issues in design and development of computing systems.</p> <p>Programme Outcome 4: This subject contributes by giving students practice in solving problems (e.g. case studies and project) that require critical thinking skills.</p> <p>Programme Outcome 5: This subject contributes through teaching some of the technical knowledge of the field</p> <p>Programme Outcome 6: This subject contributes by teaching students state of the art technologies.</p> <p>Programme Outcome 7: This subject contributes by providing an opportunity for students to practice working in a team setting.</p> <p>Programme Outcome 8: This subject contributes through the lectures and seminars.</p>							
<p>Subject Synopsis/ Indicative Syllabus</p>	<table border="1" data-bbox="483 751 1393 1707"> <thead> <tr> <th data-bbox="483 751 1393 783" style="text-align: center;">Topic</th> </tr> </thead> <tbody> <tr> <td data-bbox="483 783 1393 919"> <p>1. Introduction to business process Modern business environment; process-oriented view to organizations; examples of business processes.</p> </td> </tr> <tr> <td data-bbox="483 919 1393 1056"> <p>2. Business process engineering Process analysis; process re-engineering; business engineering and workflow.</p> </td> </tr> <tr> <td data-bbox="483 1056 1393 1245"> <p>3. Fundamental concepts of workflow Major components of a workflow management system; Buildtime metamodel: process data, activities, control flow, data flow; Runtime system structure; workflows and objects.</p> </td> </tr> <tr> <td data-bbox="483 1245 1393 1423"> <p>4. Advanced functions of workflow Events; dynamic modification of workflows; advanced join conditions; container materialization; context management; performance spheres; compile spheres; transactions.</p> </td> </tr> <tr> <td data-bbox="483 1423 1393 1560"> <p>5. Workflow systems architecture Application structure; middleware; Internet and mobile workflow; emergent technologies.</p> </td> </tr> <tr> <td data-bbox="483 1560 1393 1707"> <p>6. Workflow standards OMG's Workflow Management Facility; Workflow Management Coalition standards.</p> </td> </tr> </tbody> </table> <p>Case Study:</p> <p>Presentations will be held during the seminars, where the students will form groups to read and present real-life cases related to the subject's topics.</p>	Topic	<p>1. Introduction to business process Modern business environment; process-oriented view to organizations; examples of business processes.</p>	<p>2. Business process engineering Process analysis; process re-engineering; business engineering and workflow.</p>	<p>3. Fundamental concepts of workflow Major components of a workflow management system; Buildtime metamodel: process data, activities, control flow, data flow; Runtime system structure; workflows and objects.</p>	<p>4. Advanced functions of workflow Events; dynamic modification of workflows; advanced join conditions; container materialization; context management; performance spheres; compile spheres; transactions.</p>	<p>5. Workflow systems architecture Application structure; middleware; Internet and mobile workflow; emergent technologies.</p>	<p>6. Workflow standards OMG's Workflow Management Facility; Workflow Management Coalition standards.</p>
Topic								
<p>1. Introduction to business process Modern business environment; process-oriented view to organizations; examples of business processes.</p>								
<p>2. Business process engineering Process analysis; process re-engineering; business engineering and workflow.</p>								
<p>3. Fundamental concepts of workflow Major components of a workflow management system; Buildtime metamodel: process data, activities, control flow, data flow; Runtime system structure; workflows and objects.</p>								
<p>4. Advanced functions of workflow Events; dynamic modification of workflows; advanced join conditions; container materialization; context management; performance spheres; compile spheres; transactions.</p>								
<p>5. Workflow systems architecture Application structure; middleware; Internet and mobile workflow; emergent technologies.</p>								
<p>6. Workflow standards OMG's Workflow Management Facility; Workflow Management Coalition standards.</p>								

Teaching/Learning Methodology	<p>Lectures focus on the introduction and explanation of key concepts.</p> <p>Seminars provide students with the opportunity to deepen their understanding of the concepts taught in lectures and to apply the theories to the analysis of real-life issues.</p>																																																																															
Assessment Methods in Alignment with Intended Learning Outcomes	<table border="1" data-bbox="483 336 1427 819"> <thead> <tr> <th rowspan="2">Specific assessment methods/tasks</th> <th rowspan="2">% weighting</th> <th colspan="8">Intended subject learning outcomes to be assessed (Please tick as appropriate)</th> </tr> <tr> <th>a</th> <th>b</th> <th>c</th> <th>d</th> <th>e</th> <th>f</th> <th>g</th> <th>h</th> </tr> </thead> <tbody> <tr> <td>1. Assignments</td> <td rowspan="3">55%</td> <td>✓</td> <td></td> <td></td> <td>✓</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2. Project</td> <td>✓</td> <td></td> <td></td> <td>✓</td> <td>✓</td> <td></td> <td>✓</td> <td></td> </tr> <tr> <td>3. Mid-term</td> <td>✓</td> <td></td> <td></td> <td>✓</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4. Examination</td> <td>45%</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td></td> <td>✓</td> </tr> <tr> <td>Total</td> <td>100 %</td> <td colspan="8"></td> </tr> </tbody> </table> <p>The course will be expected to be assessed using both examination and coursework including assignments, project and mid-term examination.</p> <p>Assignments, project and mid-term examination can be act as a measure on the understandings of the students on the basic concepts of the business process and building blocks of a workflow management system.</p> <p>In addition, project can be used to measure the understandings of the students about the current industrial workflow standards. The students could be further improve their presentation and communication skills through the project presentation.</p> <p>Examination can be used as an overall measure of the understandings of the students on the workflow concepts, technologies and understand the existing standards which discussed in the lectures.</p>										Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)								a	b	c	d	e	f	g	h	1. Assignments	55%	✓			✓						2. Project	✓			✓	✓		✓		3. Mid-term	✓			✓					4. Examination	45%	✓	✓	✓	✓	✓	✓		✓	Total	100 %											
Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)																																																																														
		a	b	c	d	e	f	g	h																																																																							
1. Assignments	55%	✓			✓																																																																											
2. Project		✓			✓	✓		✓																																																																								
3. Mid-term		✓			✓																																																																											
4. Examination	45%	✓	✓	✓	✓	✓	✓		✓																																																																							
Total	100 %																																																																															
Student Study Effort Expected	<table border="1" data-bbox="483 1333 1427 1764"> <tr> <td colspan="10">Class contact:</td> </tr> <tr> <td colspan="8">▪ Lecture</td> <td colspan="2">39 Hrs.</td> </tr> <tr> <td colspan="8">▪ Seminar</td> <td colspan="2">0 Hrs.</td> </tr> <tr> <td colspan="10">Other student study effort:</td> </tr> <tr> <td colspan="8">▪ Reading & self-learning</td> <td colspan="2">59 Hrs.</td> </tr> <tr> <td colspan="10">Total student study effort</td> </tr> <tr> <td colspan="8"></td> <td colspan="2">98 Hrs.</td> </tr> </table>										Class contact:										▪ Lecture								39 Hrs.		▪ Seminar								0 Hrs.		Other student study effort:										▪ Reading & self-learning								59 Hrs.		Total student study effort																		98 Hrs.	
Class contact:																																																																																
▪ Lecture								39 Hrs.																																																																								
▪ Seminar								0 Hrs.																																																																								
Other student study effort:																																																																																
▪ Reading & self-learning								59 Hrs.																																																																								
Total student study effort																																																																																
								98 Hrs.																																																																								
Reading List and References	<p>Reference Books:</p> <p>1. M. Weske, Business Proess Management Concepts, Languages, Architectures, Springer, 2007.</p>																																																																															

	<ol style="list-style-type: none">2. J. F. Chang. Business process management systems: strategy and implementation. Boca Raton, FL: Auerbach Publications, 2006.3. W. van der Aalst and K. van Hee. Workflow Management: Models, Methods, and Systems. The MIT Press, paperback edition, 2004.4. L. Ficher (ed.), Workflow Handbook 2004, Future Strategies Inc., 2004.5. F. Leymann, D. Roller, Production Workflow: Concepts and Techniques, Prentice-Hall, 2000.6. T. Schael, T. Schal, T. and T.W. Schaller, Workflow Management Systems for Process Organisations, Springer, 1998.7. Articles from journals, magazines, and conference proceedings, including ACM TOCS, ACM TODS, IEEE TKDE, IEEE TSE, IEEE TOC, CACM, IEEE Computer, ICDE, CIKM.
--	---