Description: Process Model and Improvement

Subject: CSC  Cat-nbr: 8413  Class: 48258  Term: 3, 2005  Mode: EXT  Units: 1.00  Campus: Toowoomba

Academic group: FOSCI  Academic org: FOS003  Student contribution band: 2  ASCED code: 020307

STAFFING

Examiner: Mike McFarlane  Moderator: Penny de Byl

RATIONALE

Managers, strategic planners, operations controllers, and enterprise architects are empowered by familiarity with sophisticated analytical techniques that assist decision making in relation to highly complex systems. Such systems comprise numerous interconnecting processes that 'compete' for scarce resources. Graduates who aspire to managerial careers should have an understanding of, and skills in utilising contemporary analytical techniques relevant to process modelling. This course emphasises dynamic process modelling using Arena Business Edition simulation software.

SYNOPSIS

Students will study a variety of modelling techniques, both static and dynamic, as a means of analysing complex interactions amongst industrial and more generally business processes. These business processes are the cores of manufacturing, packaging, and service operations. Process modelling and improvement applies to such areas as eCommerce (B2B and B2C) production control, supply chain management, call-centre operations, as well as to service industries in fields such as retailing, health care, banking, finance, law, transport, food, community support, technical support, logistical support, and so on. The major focus of the course will be on the application of systems simulation to process modelling. In this regard, students will use Arena software, developed by Rockwell Automation in their project work to analyse, compare, and explore business processes of relevance to them. This course is normally offered only in odd years.

OBJECTIVES

On successful completion of this course, students will be able to:

1. understand strengths and limitations of process modelling in relation to the impact of process re-engineering and improvement on the enterprise;
2. understand a variety of modelling and simulation terminologies and techniques;
3. use contemporary diagramming methods to analyse and describe business processes.
4. develop computer based systems models of complex business processes.
5. validate and verify simulation models.
6. analyse simulation models for inefficient, wasteful or redundant activities.
7. interpret the outcomes process modelling to formulate recommendations and improvements;
8. use animated techniques to demonstrate expected differences between the 'as is' and 'ought to be' systems;
9. demonstrate expected differences between the 'as is' and 'ought to be' systems using animated techniques.

TOPICS

<table>
<thead>
<tr>
<th>Description</th>
<th>Weighting (%)</th>
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<tbody>
<tr>
<td>1. Introduction to Process Modelling</td>
<td>5.00</td>
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<tr>
<td>2. Process Diagramming and Modelling Techniques</td>
<td>15.00</td>
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<tr>
<td>3. Process Modelling and Systems Simulation</td>
<td>25.00</td>
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<td>4. Model Verification and Validation</td>
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<td>5. Model Analysis and Interpretation</td>
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<tr>
<td>6. Business Process Re-engineering/Improvement</td>
<td>10.00</td>
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<td>7. High speed process modelling</td>
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<tr>
<td>8. Call/service-centre process modelling</td>
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TEXT and MATERIALS required to be PURCHASED or ACCESSED

ALL textbooks and materials are available for purchase from USQ BOOKSHOP (unless otherwise stated). Orders may be placed via secure internet, free fax 1800642453, phone 07 46312742 (within Australia), or mail. Overseas students should fax +61 7 46311743, or phone +61 7 46312742. For costs, further details, and internet ordering, use the 'Textbook Search' facility at http://bookshop.usq.edu.au click 'Semester', then enter your 'Course Code' (no spaces).

(Arena software supplied with text.)

REFERENCE MATERIALS

Reference materials are materials that, if accessed by students, may improve their knowledge and understanding of the material in the course and enrich their learning experience.

STUDENT WORKLOAD REQUIREMENTS

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>HOURS</th>
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<tbody>
<tr>
<td>Assessment</td>
<td>20.00</td>
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<tr>
<td>Private Study</td>
<td>40.00</td>
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<tr>
<td>Project Work</td>
<td>105.00</td>
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ASSESSMENT DETAILS

<table>
<thead>
<tr>
<th>Description</th>
<th>Marks out of</th>
<th>Wtg(%)</th>
<th>Due date</th>
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<tbody>
<tr>
<td>ASSIGNMENT 1</td>
<td>10.00</td>
<td>5.00</td>
<td>02 Dec 2005</td>
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<tr>
<td>PROJECT PROPOSAL</td>
<td>10.00</td>
<td>5.00</td>
<td>16 Dec 2005</td>
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<tr>
<td>ASSIGNMENT 2</td>
<td>10.00</td>
<td>15.00</td>
<td>06 Jan 2006</td>
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<tr>
<td>PROJECT</td>
<td>100.00</td>
<td>75.00</td>
<td>27 Jan 2006</td>
</tr>
</tbody>
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IMPORTANT ASSESSMENT INFORMATION

1. Attendance requirements:
   There are no attendance requirements for this course. However, it is the students' responsibility to study all material provided to them or required to be accessed by them to maximise their chance of meeting the objectives of the course and to be informed of course-related activities and administration.

2. Requirements for students to complete each assessment item satisfactorily:
   To complete each of the assessment items satisfactorily, students must obtain at least 50% of the marks available for each assessment item.

3. Penalties for late submission of required work:
   If students submit assignments after the due date without adequate reason, as determined by the Examiner, then a penalty of 20% of the total marks available for the assignment will apply for each working day late.

4. Requirements for student to be awarded a passing grade in the course:
   To be assured of a passing grade, students must demonstrate, via the summative assessment items, that they have achieved the required minimum standards in relation to the objectives of the course by satisfactorily completing all summative assessment items.

5. Method used to combine assessment results to attain final grade:
   The final grades for students will be assigned on the basis of the aggregate of the weighted marks obtained for each of the summative assessment items in the course.
6 Examination information:
   There is no examination in this course.

7 Examination period when Deferred/Supplementary examinations will be held:
   There will be no Deferred or Supplementary examinations in this course.

8 University Regulations:
   Students should read USQ Regulations 5.1 Definitions, 5.6. Assessment, and 5.10
   Academic Misconduct for further information and to avoid actions which might
   contravene University Regulations. These regulations can be found at the URL
   http://www.usq.edu.au/corporateservices/calendar/part5.htm or in the current USQ
   Handbook.

OTHER REQUIREMENTS

1 The final project report will be retained by USQ. Students are required to ensure that
   they and all members of their work group (if applicable) have a copy of this report.
   (Feedback will be provided on the assignment cover sheet.)