



SCHOOL OF DESIGN, ENGINEERING & COMPUTING

ASSIGNMENT – 2011/12

Course:	Computing (Software Systems) Framework
Year:	Final Year (Level H)
Unit:	Business Processes and Requirements
Assignment Number:	1 (Part Two)
Unit Leaders:	Cornelius Ncube & Keith Phalp
Issue Date:	17/11/2011
Due Date:	16/12/2011 (Friday 16th December by 5pm)

This is an individual assignment

This assignment forms the second part of the coursework for this unit, and covers (or partially fulfils) learning outcomes, 2, 3 and 5.

1. Appraise critically approaches to the principal requirements engineering tasks; elicitation, analysis, specification and validation.
2. Demonstrate a comprehensive understanding of relationships among client business processes, requirements and software systems.
3. Evaluate, select, and produce appropriate models of business process scenarios or problem domains, and matching requirements and specifications.
4. Evaluate critically requirements methods and research.
5. Understand the impact of professionalism upon the requirements phase.

Marks for this second part are given (out of 100).

However, parts one and two of the coursework will be weighted 50:50 to form your overall coursework mark.

Deliverables and Assessment Criteria / Marking Scheme

You have been given a brief description of a particular application domain, and have been asked to produce a number of deliverables, for the final requirements document.

Models of Processes

Produce Role Activity Diagrams for the given scenario(s). You should produce two distinct models, one of the current (as-is) process, as described, and one to illustrate your suggested revised process (which will incorporate an IT system). Aside from accuracy of the model marks will also be awarded for:

- Appropriate separation of problem into constituent parts.
- Sensible choices for logic of process & appropriate level of abstraction.
- Appropriate (and correct) use of notation, e.g., state, actions, interactions & control constructs.

(50 marks)

Analysis of Processes

- Analysis of process. Describe any ambiguities that you have discovered from your analysis, relating this to the models you have produced.
- Describe, as a process modelling professional, the changes that you have suggested, along with benefits, and potential risks, of such changes.

(20 marks)

Reflections on Method

Discuss the issues and solutions encountered in moving from analysis (the process models) to specification and design, and mechanisms that you would use to ensure alignment of the business process model (and business needs) and the IT system.

(Maximum 1000 words)

(30 marks)

Signature of Assignment Setter

Signature of QA

A System for Course Design and Delivery in the Coastal Academy for Science and Technology

Brief (but see assignment specification for deliverables)

The Coastal Academy for Science and Technology (CAST) is a specialized educational institution engaged in teaching, training, research work, community service, and projects. The Efficiency and Quality Institute (EQI), one of CAST entities, was established as a comprehensive and flexible provider of specialist services. EQI services are divided into these main activities: Consultancy, Training and Postgraduate studies. The Postgraduate Studies are divided into three sections 1) Diplomas 2) Masters Degrees, and 3) PhDs.

As part of a drive towards enhancing the student experience The Dean of the Institute has engaged your services to model the student journey. Of particular concern to the Dean is the course design and delivery process of the Masters courses (and she has 'on the quiet', already used a member of staff to conduct some interviews with selected students and staff to try to tease out some of the issues).

This has produced an overview description of the process; though this may a) be incomplete and b) have some inconsistencies, ambiguities or inaccuracies. In addition, summaries of the main findings from interviews are also included, along with notes on individual interviews themselves.

Hence, you will (perhaps from your knowledge of education) have to make process assumptions to provide a full model (but ensure that these are clearly described as assumptions where you do so. (Note that there may also be inconsistencies in the overview and the specific views of certain stakeholders and you must both highlight these inconsistencies and, should they exist, attempt to reconcile them).

The Dean is so concerned that she has decided that the way to improve is to replace the somewhat inconsistent (predominantly manual and paper-based with some use of individual databases) process with a new integrated IT system which will enforce a revised process whilst also ensuring consistency of record keeping. Hence, the Dean has realised that they need both a new process, or processes, and an IT system which will support that process.

Requirements for this are sketchy but the idea is that the system will help the Institute in realising some of their key goals, such as:

- Increasing student satisfaction
- Demonstrating compliance with process standards and Supreme Council standards (see below).
- Increasing Efficiency of Course Delivery

In addition, that these changes would help in:

- Ensuring that courses delivered match some agreed description of content.
- Ensuring that assessment matches course description.
- Providing a mechanism for student to access on-line course materials (thus reducing paper and ensuring availability for the students).

Furthermore, Senior staff realise that to manage the change in moving from the current state to their future system, and to get process buy-in, it is important to model the process as-is, and to illustrate issues with that current process before describing suggested improvements to the process (which will of course be supported by the IT systems).

Hence, your role, initially, is to

- A) Produce Models of the Current Process and for your Proposed (Revised) Process
- B) Describe Ambiguities and Inconsistencies (see above) and Suggest or explain Process Changes or Revised Processes
- C) Produce a Specification for the IT System (NOTE that the assignment only requires reflection on moving from process model to specification not actual specifications).

Overview of the Process

The Masters programme is a minimum two years study during which the students study 12 courses during four semesters. Afterwards a thesis should be completed in no less than one academic year.

The Teaching Assistants (TAs) are only orally assigned the task by the Dean to design the courses for the master program. They are the only ones responsible for deriving the whole process, even the review of the course. They search for and gather references from the library database ad hoc, to be able to set the course objectives and outline according to the requirements of the Supreme Council of Higher Education (SCHE). Next the course outline it is divided into modules and saved in a data store. Afterwards TAs prepare the course material including handouts, presentations, assignments and workshops and sometimes even exams. The next step, they review the course against the pre-set outline and the final course is handed over to the Post Graduate Studies (PGS) department and the Dean is informed that the assignment is complete.

The PGS department gathers all course material and starts preparing a course list and organizing the timetable. The course list is subsequently sent to both the financial and registration departments. Afterwards the necessary aids (lecture room, data show, white boards, flip charts, etc.) are allocated for each course and the PGS department assigns lecturers, either internal or external, to teach the course. The internal lectures are assigned the courses immediately. However, the external lecturers are initially sent a request to teach. If they refuse, another lecturer is selected from the database and is sent another request to teach a certain course. The ready-made copy of course material is provided to the lecturer who specifies any extra aid if necessary (typically lecturers will, in such circumstances request to the TA that there is a change to the material, though, on occasion they may prepare additional (or replacement) material themselves).

Different Perspectives

In addition to the overview, the following describes a summary of the feedback from the various stakeholder groups.

Note that although each group has also made some specific suggestions for improvement only those of the lecturers have been provided.

Teaching Assistants

The interviews with TAs revealed the steps followed to design courses. Almost all TAs reported that the course design assignment is distributed according to their background "as much as possible". Though one stated that "Sometimes whoever is free prepares any course with no respect to background". They also added that they were provided very limited and short time to design courses. It ranges between one week and a month at most which was the reason why they felt overloaded because they were also assigned other jobs.

Describing the difficulties TAs faced during course design they all stated that mainly lack of up-to-date references, background, time were the main problem besides that there was not committee or specialized academic to review courses. Moreover, all TAs reported that there were no criteria or regular interval for course updates.

Some courses were updated every semester some other every year or even as one TA mentioned that "the dean assigns course redesign as he wishes". Concerning the feedback from students they reported that there is no formal feedback questionnaire and they are not involved in the teaching process or even in contact with students. Therefore, the only complaints they may know about is from internal lectures when they sometimes request amendments to course material.

Lecturers

From the lecturers' perspective course material has several difficulties because they were prepared by TAs and they added that there was no interaction whatsoever with TA concerning the design of course material.

A lecturer stated ironically that "executive secretary prepared some courses". One lecturer commented that the course material were "totally unclear parts of the course" claiming that "courses prepared by TA does not cover all knowledge area" another lecturer stated that "course contained various subjects that were not related or linked together" and that "content was very weak and of low quality" also a third lecturer claimed that there was "no pre-set content that restricts whoever teaches any course" and that the "material was very weak".

All lecturers agreed that the material was not understandable and that they had to depend on their own knowledge and experience to deliver the courses as one lecturer identified that the "whole burden lies on the skills of the lecturer". In addition some of the lecturers had to provide supplementary material in order to compensate the deficiency of course material because students were "frustrated and annoyed" and complained about slides being "totally not understandable", also described supportive notes as "vague" and sometimes even "missing parts" of the material they also added that "material was not adequate and weak" and "not clear" as well. One lecturer mentioned that he even tried to teach the ready-made course material but because of student complaints he said "I had to prepare a new content before each lecture".

Responding to the how student assessment takes place, a lecturer pointed out that there is "no pre-set criteria for assessing students' performance". Another lecturer mentioned that student assessment depend on "attitude, learning capabilities, commitment in submitting assignments on time and of course grades" while a third lecturer stated that there is a "great weight on the final exam plus Interaction plus Assignments plus reports and presentation skills". As well as students, lecturers also stated that there is no formal

feedback questionnaire or even complaint procedure to be followed. They received only oral complaints from students and tried to resolve it if possible.

Finally when they were asked about proposed improvement for course design and delivery they all agreed that the lecturer should at least be involved in designing the course even on stated the lecturers should prepare their own material. Another lecturer pointed out that there should be "detailed form that clearly describes the outline for each topic what to deliver and how" another also reported that each course should have a "course file summary, session plan, performance criteria, feedback". A third lecturer stated that "course should be reviewed and approved by a group of specialized academics in the knowledge area". For improving the course delivery they added that course should be always up-to-date and up to the master level. Also lectures should be well prepared for classes and there should be better teaching aids especially classrooms.

Student Perspective

Almost all student respondents stated that they faced problems with understanding the course material. One student commented that "material was vague and not to the point" another student stated that "Course material was not clear" and also that "course material was not useful" whilst a third student thought that course material was "not effective at all". They all mentioned that they had to take notes all the time in order to have something to rely on while studying because as one student mentioned that material was "irrelevant to what was explained during lectures". All these responses show that students are dissatisfied with the course material. Though, some claimed that this deficiency was mostly covered by lectures knowledge and experience of the subject area. All students reported that they benefited from assignment as they had to search for resources to prepare presentations or reports. However one student claimed that while preparing assignments he came across new topics which were not included in the course material that is why he thought the material was not up-to-date.

All students interviewed agreed that the teaching aids especially classrooms were not adequate and suitable at all. They also thought that lecturers did not prepare their own material because of the difficulties they faced during course delivery. One student pointed out that some lectures were "not able to explain some slides" and that they "skipped slides and mentioned they were irrelevant". Another student added that some lecturers "stop at a slide and try to figure out what is meant". Students thought that some of the lectures were totally not prepared for classes and that some of them did not have knowledge of the subject-matter. Therefore they all agreed that some lecturers were not clear and understandable in their explanation one even commented that "some lecturers were not able to convey the information" and another added that "it would have been better for lecturers not to attend at all". Even though some lecturers encouraged class discussions, some students felt they were useful and some others thought it was "boring".

All students reported that TAs were not totally involved in the delivery process they also declared that administrative staff was not helpful and did not show interest to understand their difficulties. Although their progress relied on grades some students stated that presentations, assignments, class participation and attendance were sometimes taken into account by some lecturers. When students were asked whether there was a formal feedback questionnaire they all responded that they had to complain orally and that "nothing" was done to resolve their complaints.