

School of Science and Technology

COURSEWORK ASSESSMENT ELEMENT

MODULE CODE	:	ISYS10221
MODULE TITLE	:	Introduction to Systems Analysis and Design
MODULE LEADER	:	Dr Jon Tepper
TUTOR(S)	:	Dr Paul Bowden Mr Steve King Dr Stuart Kennedy Dr Xiaoqi Ma Mr Ahmad Al-Shami
COMPONENT	:	1 of 2
TITLE	:	Systems Development Portfolio
LEARNING OUTCOMES ASSESSED	:	1 to 9
WEIGHTING	:	70% of the total coursework mark 35% of the overall module mark
DISTRIBUTION DATE	:	Monday 25 th October 2010 (University Week 14)
SUBMISSION DATE	:	Tuesday 8 th March 2011 at 2pm (University Week 33)
SUBMISSION METHOD	:	Hardcopy submitted to Student Information Desk, 3 rd Floor CIB Electronic copy submitted to ISAD Portfolio Dropbox for your Group via NOW (instructions to follow)
NOTE	:	The usual University penalties apply for late submission and plagiarism. Please consult your student handbook for further details.

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I. Portfolio Requirements

You are provided with a business case in Section II of this document. The business case includes a business profile, System Request document and a system description. Collectively, these will typically provide sufficient information for you to:

- decide on a suitable systems development methodology for the business given the constraints provided in the System Request document;
- identify and list high-level functional and non-functional requirements for the new system;
- produce logical and physical data flow diagrams (DFDs) of the current system from context level to at least a level 0 DFD;
- produce entity relationship diagrams (ERD) and normalised data tables for the current system;
- produce a logic model of the processing logic for one or more primitive DFD processes using structure English, decision tree or decision table (for the current system).

There will, however, be intentional gaps in the system requirements and description. For example, there may be insufficient information to produce a logical level 1 DFD. Where appropriate, YOU are therefore expected to generate and agree on a set of reasonable and realistic functional and non-functional requirements.

Given the business case, you (as a group) are required to produce a systems development portfolio that contains the five sections listed in table 1.

Table 1. Portfolio items, weightings and *recommended* maximum pages per section.

Section	(/70) Portfolio Marks	Maximum Page Limit
Team Structure & Development Strategy	10	2
Team Concept Map	10	2
Project Work Plan	10	3
System Proposal	30	15
Evaluation	10	2

As shown in table 1, a maximum page limit is *suggested for each section*. The portfolio in total, however, must not exceed 25 pages (excluding appendices) with a minimum font size of 10 pitch. **A penalty of 10 marks will be incurred if you exceed this page limit.** Further information, however, can be added as Appendices. For example, you may wish to add evidence of group meetings or supportive materials that aided learning. Although not marked, appendices may help the tutor to decide the type of effort apportioned to each section.

To help you, a portfolio template document will be made available for you to use. The template is optional and so you are free to define and use your own document format.

Although there are nearly 20 weeks between the distribution and submission times of the portfolio, there will be three assessed review point activities during this period. As shown in table 2, each of these activities will affect the final mark of your portfolio.

Table 2. Portfolio assessment activities. Note that the remaining 70 marks of the portfolio marks are for the submitted portfolio.

Portfolio Assessment Activity	Purpose	Learning Outcomes Assessed	Teaching Week	(/30) Portfolio Marks
Review Point 1	Review progress of team structure, problem solving technique, team concept map and initial project plan.	1, 2	18	10
Review Point 2	Review revised project plan and process models (data flow diagrams).	2, 3, 4	26	5
Review Point 3	Class presentation of group concept maps to demonstrate understanding of SAD and CMap tool.	1 to 9	30	15

On the final submission date you (as a group) are expected to submit:

- One hard copy of the systems development portfolio. This will typically be in the form of an organised collection of documents generated in MS-Word, WinA&D and maybe an MS-Project document. Handwritten or hand drawn copies are NOT permitted unless you have mitigating circumstances which can be substantiated;
- All electronic files associated with your systems development portfolio to the ISAD Portfolio Dropbox on NOW – a group folder will be made available for you. Further instructions will be provided nearer the submission date.

Your portfolio document and associated progress will be assessed according to the assessment criteria provided in Section III.

Finally, you are expected to submit a colleague contribution score email if and only if you consider that one or more group members have not equally contributed to the group work *and* you have reasonably been unable to resolve the issue earlier. Any such email must be sent as directed in Section VI – failure to do so may result in the email being ignored.

The remainder of this section provides you with detailed requirements for each section of the portfolio.

Team Structure and Development Strategy

This element addresses learning outcomes 1 and 2 and requires you (as a group) to produce the following:

- Brief summary of each student's strengths with respect to the role and skills of a Systems Analyst. More specifically, it must be clear that each student has completed Belbin's Self-Perception Inventory exercise to help identify group strengths. The group should have considered these to guide them towards the most effective team structure and working practices.
(1 pages max).
- Given the company profile and business requirements, select a suitable development methodology and provide a reasoned argument for your choice.

- Other than fish bone diagrams, identify and describe an effective problem solving technique for a systems development team to identify the root causes and effects of problems within a system.

(0.5 page max)

Team Concept Map

This element addresses learning outcomes 1 to 9 and requires you (as a group) to produce a concept map showing your team's understanding of systems analysis and design. You are expected to explain how your concept map has changed over the duration of the academic year and also how it corresponds to the system models in the group's portfolio.

(2 pages max)

Project Workplan

You are expected to have considered the main tasks, activities and associated resources (e.g. people and time) required to successfully complete your development project over the five month period (from distribution to submission). You should categorise your activities according to the phase in which they reside and also identify key milestones to be reached. You are expected to produce:

- Work breakdown structure (list of tasks, timings, team member task allocations, and associated dependencies required for the Planning and Analysis phases (2 pages max)
- Gantt chart *or* Pert diagram with critical path (1 page)

You may wish to elaborate on what features, if any, of Microsoft Project you used to manage the project.

System Proposal

This section is the most significant section of the portfolio and consists of some key deliverables generated during the Systems Analysis phase. Although a full System Proposal contains logical system models for both the current *and* new system – you are only required to produce process, data and logic models for the current system illustrating your understanding of the problem (as described in the 'system description' section of the business case).

You must include the following:

- A list of functional requirements for the *new* system – numbering each requirement as follows FR1, FR2, ..., FRn. You must also highlight which functional requirements are already in the current system.
(1 page max)
- A list of non-functional requirements for the new system – numbering each requirement as follows: NR1, NR2, ..., NRn.
(1 page max)
- Summary table of Use Cases for the *current* system showing response to major system events (as described in the Systems Description). For each process you must only show: *process number, name, purpose, input, source of input, output, output recipient(s)*.
(2 pages max).

- Four process models of the current system consisting of:
 - Context level DFD
 - Logical level 0 DFD
 - Physical level 0 DFD
 - Logical level 1 DFD for a level 0 DFD process

(4 pages max)
- A logic model for the processing logic of the primitive DFD process provided for the current system. It should consist of either:
 - Structured English *or a*
 - Decision Tree *or a*
 - Decision Table

The model should show good use of sequence, selection and/or iteration constructs where necessary.

(1 page max)

- Logical Data Model (for data described in System Description)
 - Tables normalised to third normal form (3NF)
 - ERD showing key attributes only (after normalisation)
 - Physical Data Model (for data described in System Description)
- (3 pages max)*
- Create Read Update Delete (CRUD) matrix to show how the level 0 DFD processes for the Current System are currently using the data stores.
- (1 page max)*
- A detailed explanation of how the logical and physical models of the current system can be modified to meet the requirements of the new system (described in the Systems Request document). This constitutes your proposal for change.
- (2 pages max)*

It is essential that you use WinA&D to produce all system models except Structured English, Decision Trees and Decision Tables.

Evaluation

This section provides you with an opportunity to reflect and critically evaluate your experiences of the systems development process. You are specifically required to consider the following:

- How successful was the planning of the project?
- How well did the team work together?
- How could the process have been improved?
- How useful was concept mapping to help you learn?
- How did the use of MS Project and the CASE tools help with the project? What other features might be useful in such tools?

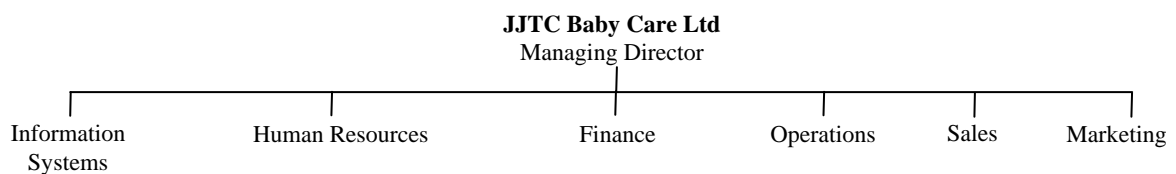
(2 pages max)

II. Assessment Scenario

Business Profile – JJTC Baby Care Ltd

JJTC Baby Care Ltd are a medium-sized national retail chain of low cost baby products, such as food, clothing, furniture, toys, safety equipment and travel systems. The company was established 10 years ago by Samuel Carter and to-date has 25 retail outlets across England with head office based in Slough. Annual sales last year were £25 million and have been growing at a rate of about 5% per year for the past 4 years.

The company's senior management team consists of:



Information Systems Development

Maria Silvas is the director of Information Systems and is responsible for the strategic direction, development and maintenance of information systems used within the company. All information systems are developed in-house and maintained by Maria and her team of Systems Analysts (you!), Systems Developers and Support Engineers. The company uses a client/server network of computers at headquarters and in-store point of sale (POS) computer systems to handle the transaction volume generated by the thousands of customers across the outlets. National Cash Register (NCR) computers are used at each store to serve as host for a number of POS systems. Data are transmitted in batches at night using a dedicated 2MB link to headquarters where all records are stored in a network of Intel-based servers. Inventory control and purchasing are done centrally. Salaried employees are recruited and managed centrally by Human Resources. The in-store employee management application supports recruitment and termination of hourly paid employees only. All employees are paid centrally by the company. Each store has electronic records of its own activity, including inventory and personnel. Profit and loss, balance sheets and other financial statements are produced for each store by centralised systems.

New information system or information technology (IT) projects are reviewed and approved by a project steering committee which meets quarterly. The committee consists of representatives from each affected business function and a member of Maria's information systems team.

System Request – Employee Recruitment & Development Project

Project Sponsor: Josh Stafford, Human Resources Director

Business Need: This project has been initiated to improve the speed, efficiency and effectiveness of the current employee recruitment and development system. It is to allow a broader spectrum of applications to be considered and relevant training needs to be identified prior to the employee commencing. This would better prepare potential employees and enable training costs to be factored in prior to the employee commencing employment. It would therefore facilitate new staff to contribute sooner to the company's strategic aims.

Type of System:

- New System
- System Enhancement
- System Error Correction

Urgency:

- Immediate – operations are impaired or opportunity lost
- Problems exist, but can be worked around
- Business losses can be tolerated until new system installed

Business Requirements:

Graduates should be able to make applications both on-line using the company website in addition to the current postal system whereby graduates receive an information pack containing an application form. Managers from each department should be able to use the company intranet to supply Human Resources with job descriptions for each available position suitable for new graduates. Although Personnel have their own tariff for starting salaries (e.g. £20k for BA/BSc, £25k for MA/MSc and £30k for PhD), department managers should be able to use the intranet to electronically document and recommend an increased amount for consideration by senior management - this may be to acquire highly qualified or gifted graduates that have high market demand. To facilitate faster integration into departmental activities, the department manager should also be able to forward a training plan to Human Resources prior to the employee starting that is tailored to the potential employee's needs. Paperless internet-based communication between Human Resources and internal (department) and external (potential employee/graduate) agents should be encouraged where possible. The minimum functionality that the new system should include is listed below:

- Receive Application
- Receive Job Description
- Select for Interview
- Evaluate and Recruit
- Purge Year-old Applications
- Create Employee Record

Although a non-functional requirement, the operational requirements are that the new internet-based system should be able to read the 'Graduate Vacancies' database, which contains details of vacancies and potential variances in the starting salary. The new system, however, should not allow automatic updates to the Graduate Vacancies database – this should be reserved for Personnel staff to register accepted posts. The internet-based aspects of the system should only process employee (or graduate) application requests and facilitate communication between department managers and personnel staff during the recruitment process.

Business Value:

We believe that with a more flexible and efficient employee recruitment and development system, JJTC Baby Care Ltd will be able to recruit the most highly qualified and motivated graduates who will be most likely to inject innovation, knowledge and eventually strategic direction into the company. Also, using the company website to obtain applications will

enable a broader range of applications to be processed and thus to reduce the possibility of over-looking ideal candidates. Requiring departmental managers to provide training plans tailored for potential candidates will enable new recruits to be more quickly integrated into departmental activities and meeting company objectives.

Additional Information and Constraints:

- Each graduate, from application to acceptance/rejection should be processed and informed of a decision within 2 months.
- Each graduate should be required to register their details and submit applications under secure conditions.
- In addition to storing information about graduate applications, this project will also be used as a vehicle for amending how information about training course is currently stored for each employee (potential, new and existing). At the moment, each unit associated with a training course can have many elements of assessment (i.e. coursework or examination) but each element can only have one component. The new system will allow more complex unit assessments allowing for multiple components.
- The system should be in place within 18 months with a prototype ready within 3 months after initial requirements determination for users to review and feedback. Schedule visibility is essential for ensuring project remains adaptable to ongoing needs of the project, budgetary modifications and changing user needs
- Application software must be compatible with existing network operating system and infrastructure so although upgrades of existing technologies will be acceptable, introduction of new unfamiliar technologies will not (due to increased staff development costs)
- System development costs must not exceed £100,000 (so time allocated to this activity must be appropriately restricted).
- Operational costs are expected to be approximately £200,000 per year for the first three years of operation – within this period, however, break-even should be evident within this time. A return on investment (ROI) of above 20% is expected over four years and should be evident from the output of new graduate recruits.

System Description

Assume you are a department or team of systems analysts working under the direction and responsibility of Maria Silvas. Acting on the System Request by Josh Stafford for a new employee recruitment and development system, you have performed a lengthy fact finding process and discovered that the current employee recruitment and development system operates as follows:

The company records at least the following for each employee: title, name, address, qualifications, previous work experience, skills, courses attended and current department. Specific details about courses attended whilst at the company such as individual units passed for each course, date, venue and outcomes are also stored as is information about the supplier of the course – which may be either the Training department or an external company. New employee recruits (usually graduates) are hired by the personnel manager based on data provided on the application form by the applicant and evaluations collected from department managers who interviewed the candidate. Graduates may apply at anytime although the company actively recruits from January to March each year. Department managers notify the personnel manager when a role, particularly suitable for a new graduate, becomes available using Graduate Vacancy form. The information given by department managers includes job description, essential skills and qualifications, desirable skills and qualifications, number of positions available, and recommendation for an increase in base salary for successful graduates. All job descriptions received are date stamped and recorded in a 'Graduate Vacancies' file. The personnel manager compares the qualifications of the available pool of applicants with the essential and desirable requirements given with each job description. When appropriate matches are made, the personnel manager schedules interviews between the department managers (who submitted the respective job descriptions) and the three best candidates from the pool for each available job. After receiving evaluations on each interview from the department managers, the personnel manager makes a recruitment decision based upon the evaluations and applications of the candidates and characteristics of the job, and then notifies the interviewees and department managers about the decision which will either be an acceptance or rejection decision. Applications of rejected applicants are retained for one year, after which time the application is purged. When recruited, a new graduate is provided with an employment contract outlining terms and conditions of employment which they are expected to sign and date if they wish to accept the offer and thus commence employment. A graduate returns an acceptance offer with their accept/decline decision. If the graduate accepts the offer then the personnel manager requests a training plan from the department manager. The Graduate Vacancies file is then updated accordingly.

Description of Processing Logic (for your SE/Decision Tree/Decision Table)

Preliminary fact finding for processing logic discovered the following brief details of a primitive process called Candidate Selection:

Candidate Selection

For each candidate, managers base their decision on the type and grade of qualification – this also determines the type of salary increase recommended. Due to shortages in science recruits, science graduates typically attract the highest recommendation for a salary increase (from the base salary offered for that qualification type) up to a maximum of 10% depending on grade, other subjects range between 2 – 8% increases based on grade. Note that no increase can be recommended for those candidates who received a degree without honours or received a third class honours degree.

Note: you will need to identify your own increments within the allowable range (e.g.

increment factor of 2% for each grade band). Also, to demonstrate your knowledge and competence of a logic modelling technique, you may extend the processing logic described here.

Data Description (for you to normalise and create ERDs)

Currently, information about an employee at least brings together that of departments, other employees (e.g. managers, supervisors), and training courses the employee has attended whilst at the company. Past information about the employee is stored for reference such as qualifications and previous employment history. It is noted that an employee must belong to a department and have a supervisor (who is also an employee). Every department has a manager but not every employee manages a department or supervises another employee. An employee may attend a training course held by either the training department within the company or a third party supplier. A training course consists of one or more units. A unit is assessed by one or more unit assessments which may be weighted according to the level of difficulty or amount of effort required. The employee's unit mark is calculated as the weighted aggregate of the assessment marks. The units themselves are also weighted. Subsequently, an employee's mark for the course is determined by a weighted aggregate of the unit marks. All relevant details regarding each course and associated units attended by that employee is therefore recorded, including the outcome even if the employee failed to complete all of the units for the course.

The following rudimentary data items have been identified for Employee:

Employee_No, Employee_Name, Employee_Address, [Qualification_Type, Qualification_Description, Subject, Grade, School_University_Name, School_University_Address, Awarding_Body, Date_Qualification_Obtained, Past_Job_CompanyName, Past_Job_CompanyAddress, Past_Job_Position, Past_Job_Start_Date, Past_Job_End_Date, Past_Job_Reason_for_Leaving], Job_Description, Status, Start_Date, Salary_Code, Salary_Amount, Department_No, Department_Name, Department_Location, Dept_Manager_Employee_No, Supervisor_Employee_No, [Course_No, Course_Name, Course_Start_Date, Course_End_Date, CourseCoordinator_Staff_No, Course_Employee_Mark, Total_Units, [Unit_No, Unit_Name, Unit_Cost, Unit_Weighting, Unit_Outcome_Code, Unit_Outcome_Description, Employee_Unit_Mark, [Assessment_Type, Assessment_Description, Assessment_Weighting, Employee_Assessment_Mark]], Course_Employee_Outcome_Code, Course_Outcome_Description, Total_Course_Cost, Third_Party_SupplierNo, Third_Party_Name, Third_Party_Tutor_Name, Third_Party_Address]

Note: those attributes within [] repeat for each employee e.g., an employee can attend many training courses; a training course consists of many units.

You may make amendments to further demonstrate your knowledge of data normalisation. However, such additions must be well-justified otherwise they will be ignored.

Additional Information

- After an initial economic feasibility study, assume Sam Carter has authorised the release of £900,000 for the project.
- Recently recruited graduates have skills with internet-based technologies – which is new to the company.

III. Marking Criteria for Portfolio Assessment Activities

Table 3. Assessment criteria for Review Point 1.

(/10) MARKS	DESCRIPTION	CRITERIA
>=7	Excellent progress	The group is very well-organized and have a clear MS Project schedule even outlining critical path and tracking current progress. The group appear autonomous and to be working in a professional manner organised according to strengths identified in the Belbin Tests. It is evident group meetings are taking place and are well documented. A team structure and methodology have been defined with well-justified. A problem solving technique has been identified and well-justified. The project plan is practically complete – activities reflect appropriate SDLC phases and activities and are realistic and well-defined.
6-6.9	Very good progress	A strong attempt has been made to function as a group and identify the team strengths according to the Belbin activity to guide team structure. It is evident the group have met weekly. A methodology and a problem solving technique has typically been selected with some reasonable justification – one is usually more justified than the other. Most SDLC activities and dependencies associated with the methodology have been identified in the project plan although the plan is about 60% complete (i.e. two or so missing tasks and dependencies may be slightly over-ambitious).
5-5.9	Good progress	A good attempt has been made to function as a group and identify the team strengths using the Belbin activity to guide team structure. It is evident group have met at least twice. A methodology or problem solving technique has been selected although with little justification. Many SDLC activities and dependencies associated with the methodology have been identified although the plan is about 50% complete (i.e. tasks and timings missing and/or in paper form). Many tasks are realistic and relate to spec.
4-4.9	Minimal progress	A reasonable attempt has been made to work as a team and a few team strengths have been identified with reference to Belbin activity. Some methodologies have been considered but the group have much further study to do before making a decision. Some activities and dependencies may have been identified although the plan is largely incomplete and in very rough draft. Some tasks are realistic and relate to spec. A problem solving technique may have been referred to although not substantiated.
<4	Little or no progress	Little or no evidence that the group have made any progress with regards to functioning as a group or identifying team strengths, a suitable methodology and constructing a reasonable project plan. Looks as though group have made rough notes the night before and what is produced shows little or no effort and/or understanding.

Table 4. Assessment criteria for Review Point 2.

(/5) MARKS	DESCRIPTION	CRITERIA
5	Excellent progress	The group have clearly grasped the concept of process modelling and able to express the functionality of the system from Context to Level 1 using accurate DFD notation. Excellent practice is evidenced by detailed use case tables being shown or discussed for each process. The group have thoroughly grasped the assessment problem and able to discuss issues and limitations with the new system and identify one or more functional extensions to meet the requirements of the new system. The group are able to present a comprehensive and fully revised project plan and competently discuss changes to it,
4	Very good progress	Clear evidence that the group understands the detailed functionality of the existing system – expressed through a reasonably accurate use of a Context diagram and level 0 DFD. Strong analytical ability is evident from their articulation and use of ‘use cases’ and DFDs with respect to the system description. The group are well-organized as evidenced by their coherent revised project plan.
3	Good progress	Some clear evidence that the group understands the broad functionality of the existing system – expressed through the use of a Context diagram and reasonably complete level 0 DFD. The group are able to explain their DFD models within the context of the system description. There are, however, numerous DFD notation errors and integrity issues between the model and the requirements, suggesting some gaps in knowledge. Some evidence that a reasonably coherent project plan is in place and being used.
2	Minimal progress	Some reasonable evidence that the group understands the broad functionality of the existing system. Some correct DFD notation has been used in places to construct a reasonably complete Context diagram and a partial level 0 DFD. Group can provide some explanation of key functionality but the level of understanding as to the relationship with the systems description is unclear. Model may typically be hand drawn at this stage. The group may also have provided some evidence of a rough project plan.
0-1	Little or no progress	Little evidence that the group understands the functionality of the existing system or able to evidence their understanding using DFDs. A partial Context or level 0 DFD may have been produced but the group are unable to provide much meaningful explanation. Little or no attempt has been made to revise the project plan.

Table 5. Assessment criteria for Review Point 3.

(/15) MARKS	DESCRIPTION	CRITERIA
>= 10.5	Excellent concept map presentation	The group have provided a competent and well-rehearsed presentation of their concept map. The presentation style is unique and engaging revealing a detailed understanding of systems analysis and design concepts covered thus far and beyond. As shown in the presentation, the group have made sophisticated use of the CMap software, typically incorporating multimedia and/or linking with concept maps. All concepts and relationships are meaningful and labelled appropriately. The class was engaged and questions were encouraged.
9-10.4	Very good concept map presentation	The group have provided a well-rehearsed presentation of their concept map with order and content being clearly presented. The presentation style is traditional in nature (PowerPoint slides) and engaging revealing a strong understanding of many of the systems analysis and design concepts covered in the module thus far. The group have made competent use of the CMap software, typically limited to those features used in the lab material. Most concepts and relationships are meaningful and labelled appropriately. The class was engaged and questions were encouraged.
7.5-8.9	Good concept map presentation	The group have provided a rehearsed presentation of their concept map with most of the content being clearly presented – minor issues regarding explanation and comprehension. The presentation may have overrun by three to five minutes, included obvious adlibbing and style is traditional in nature (PowerPoint slides). The concept map shows a good understanding of at least one the modelling techniques in particular. The group have made good use of the CMap software, typically limited to some of those features used in the lab material.
6-7.4	Adequate concept map presentation	The group have provided a moderately rehearsed presentation of their concept map with some of the content being clearly presented – some major issues regarding explanation and comprehension. The presentation may have lacked detail and structure, overrunning by five to ten minutes and included obvious adlibbing. The concept map shows some understanding of at least one of the modelling techniques in particular however the group is typically unable to correctly describe it. The group have made some use of the CMap software, typically limited to one or more of those features used in the lab material.
<6	Poor concept map presentation	The team appear to have made little or no attempt to present their concept map in a meaningful and engaging manner. Efforts are limited to a rough draft the night before or random concept nodes and relationships which only relate slightly to the level of systems development knowledge expected at this stage. Some factual information may be present but perhaps taken directly from a textbook. Presentation appears to lack adequate preparation, structure and/or content.

Table 6. Assessment criteria for the systems development portfolio document.

GRADE	(/10) PROJECT WORK PLAN	(/10) TEAM STRUCTURE & DEVELOPMENT STRATEGY	(/10) GROUP CONCEPT MAP	(/30) SYSTEM PROPOSAL	(/10) PROJECT EVALUATION
1 st (>70%)	A professional and convincing use of the appropriate project management techniques and software is demonstrated. The project work plan clearly and accurately outlines the scope. All activities and dependencies are accurately defined and professionally presented. The group demonstrate a level of project management knowledge and tool use that goes beyond what is taught during the module.	An authoritative grasp of the concepts and techniques for effective team working is evident. The techniques used to identify and synthesise team strengths identified through Belbin exercise, is erudite and demonstrates a level of competency that exceeds expectations at this level. Shows a critical understanding of systems development methodologies with a concise and accurate evaluation of development methodologies for the given problem scenario resulting in the selection of a suitable methodology. A problem solving method is discussed and well-justified using appropriate literature.	The team have developed a detailed and information-rich concept map evidencing a sound conceptual understanding of systems analysis and design principles (typically beyond that taught). The group are able to comprehensively discuss how their concept map has changed over the year and how it corresponds to ALL of their system models. Freely available concept mapping software was used to produce their professionally presented concept maps.	A thoroughly convincing use of systems modelling techniques to accurately model the existing system and propose extensions to the new system is evident. Inherently adopts a holistic system-level perspective. All models are tightly coupled with the labelled requirements and professionally produced using CASE tools. A deep understanding of process, logic and data modelling is evident from the coherence, correctness and complexity of the models.	A thoroughly critical and reflective understanding of the systems development process experienced by the group is evident. A critical account is given that reveals personal insight into the effectiveness of the modelling techniques used and extensions to the current system proposed. Concise links are made to relevant texts. The group are able to articulate how useful concept maps were to helping them learn systems analysis and design.

GRADE	(/10) PROJECT WORK PLAN	(/10) TEAM STRUCTURE & DEVELOPMENT STRATEGY	(/10) GROUP CONCEPT MAP	(/30) SYSTEM PROPOSAL	(/10) PROJECT EVALUATION
<p>2:1 (60-69%)</p>	<p>A persuasive use of taught project planning techniques to identify and show the project work plan. All major activities and timings have been clearly and convincingly identified. Staff/task allocations are evident. Dependencies are accurately shown with some critical tasks.</p>	<p>A persuasive use of the Belbin inventory test is applied to identify team strengths, organise the team and mode of working. A literature review is evident by a strong understanding of development methodologies with the selected methodology is coherently and persuasively justified using the criteria by Dennis, Wixom & Roth. An appropriate problem solving method is discussed and well-justified.</p>	<p>The concept map evidences a detailed and correct understanding of the taught modelling techniques. All of the concepts and relationships shown are meaningful. The group are able to discuss how their concept map has changed over the year and provide some indication as to how it corresponds to two or more of their system models. Lacks some clarity and much of the areas mentioned are firmly within taught content.</p>	<p>A strong ability to view and model a system holistically is evident – ensuring most if not all models are integrated and appear to meet requirements. Proposed extensions of the existing system to the new system are realistic and meet requirements. Competent use of CASE tools and notation. The Use Cases and system models are mainly accurate and realistic. (DFDs accurately balanced and data in 3NF).</p>	<p>A coherent and reasoned discussion concisely outlines the strengths and weaknesses of the development process taken. Wider review of supportive literature is evident with a clear ability to integrate appropriate concepts to support or critically examine approaches taken. The group are also able to articulate how useful concept maps were to aid their learning of the taught modelling techniques.</p>

GRADE	(/10) PROJECT WORK PLAN	(/10) TEAM STRUCTURE & DEVELOPMENT STRATEGY	(/10) GROUP CONCEPT MAP	(/30) SYSTEM PROPOSAL	(/10) PROJECT EVALUATION
<p style="text-align: center;">2:2 (50-59%)</p>	<p>Good use of appropriate project management techniques and MS Project to show a project work plan. Task information and group member allocations may be given but requires more detail to be convincing and realistic. Most, though not all, key activities and timings have been identified. The dependencies and diagram produced show some clear limitations in understanding and interpretation.</p>	<p>Belbin activity is used to good effect to identify team strengths, however, the justification for team structure and practice needs to be substantiated further or supported by the literature. Evidence of a good understanding of the main development methodologies is apparent. The selected methodology is justified but lacks some coherence and could benefit from further research and detail. A problem solving method is mentioned with some justification (albeit anecdotal or glib).</p>	<p>The group are able to provide some discussion as to how their concept map has changed over the year and provide some indication as to how it corresponds to one of their system models. Some relationships may be incorrect although on the whole it represents a good broad knowledge of the topic.</p>	<p>A good understanding of the system description and system request documents is clearly evident. Model integration, however, is noticeably weak. Use Cases relate to the Context DFD, although some cases are inaccurate or missing. Proposed extensions to new system appear reasonable but require further justification. The process, data and logic models are produced using appropriate CASE tools and mainly use an agreed notation. However, clear limitations evident with respect to DFD balancing, ensuring 3NF data models and/or ability to demonstrate all logic model constructs.</p>	<p>Good consideration of the development processes and practices experienced is given. Although comments may be critical in places and applied to most aspects – evaluation is mainly descriptive and limited to a local review of each process or method without consideration of the approach as a whole. A good explanation is given of the how concept mapping aided their learning.</p>

GRADE	(/10) PROJECT WORK PLAN	(/10) TEAM STRUCTURE & DEVELOPMENT STRATEGY	(/10) GROUP CONCEPT MAP	(/30) SYSTEM PROPOSAL	(/10) PROJECT EVALUATION
<p style="text-align: center;">3rd (40-49%)</p>	<p>An acceptable attempt has been made to produce a project work plan. Although the work plan is typically incomplete, it adequately identifies a number of key tasks within some of the project phases. Some attempts to identify dependencies may have been made but are mainly incorrect/incoherent. A diagram may be present but further study and better articulation is evidently required.</p>	<p>An acceptable attempt has been made to identify team strengths and structure using the Belbin inventory test. A wider review and understanding of other abilities is required to clarify team attributes and practice within context of the Systems Analyst. Lecture notes and handouts are typically used to describe development methodologies and the level of understanding is unclear. Further justification for the selected methodology and a problem solving technique is needed before it could be fully accepted or appreciated.</p>	<p>The team appear to have formulated a rough concept map that contains some meaningful systems development information. Some explanation is provided as to how an aspect of the system models have changed over the year although further detail and clarity required. Little linkage to models in assessment is provided. Group typically unable to describe relationships. Some aspects of the concept map are relevant to one or more modelling techniques.</p>	<p>An acceptable attempt has been made to produce a systems proposal that adequately models the existing system. Some correct terminology/notation is used and an adequate attempt to define use cases is evident. Proposed extensions of the existing system are meaningful in places but are typically brief, minor or incomplete. Typically, one type of system model is produced more accurately than the others. Organisation and coherence of the models are limited and show little integration.</p>	<p>An acceptable attempt has been made to evaluate some aspects of experience through the systems development process. Although information may be colloquial or descriptive in nature it is meaningful and provides some consideration of the adequacy of the process. Some explanation may be given as to how useful the concept mapping technique was – although this is limited to glib or anecdotal commentary. Some important aspects have been clearly overlooked and further information and coherence is required.</p>

GRADE	(/10) PROJECT WORK PLAN	(/10) TEAM STRUCTURE & DEVELOPMENT STRATEGY	(/10) GROUP CONCEPT MAP	(/30) SYSTEM PROPOSAL	(/10) PROJECT EVALUATION
<p align="center">Fail (<40)</p>	<p>There is insufficient evidence that appropriate project planning techniques and software tools have been adequately understood and applied to manage the development project. At best, some useful information may be present but further coherence, structure and academic study is required for it to be adequate.</p>	<p>There is insufficient evidence that appropriate techniques have been adequately understood and applied to review and act on the strengths of each team member. Also an inadequate understanding of development methodologies and problem solving techniques is apparent with little or no ability to suggest an appropriate methodology. At best, some useful/relevant information may be present but further coherence, structure and academic study is required for it to be adequate.</p>	<p>The team appear to have made little or no attempt to produce a meaningful concept map or describe the change in map. Efforts are limited to a rough draft the night before or random concept nodes and relationships which only relate slightly to the level of systems development knowledge expected at this stage. Some factual information may be present but perhaps taken directly from a textbook.</p>	<p>There is insufficient evidence that the systems analysis techniques have been understood to an acceptable level. At best, some useful/relevant information may be present but much more academic study is clearly required for it to be adequate and meet the requirements of the assessment.</p>	<p>There is little evidence of any meaningful evaluation being performed. Any information given is based on everyday knowledge or extremely limited due to an inadequate level of understanding or knowledge.</p>

IV. Feedback Opportunities

Formative (to facilitate learning)

You will frequently be given informal verbal and/or written feedback regarding your (or the class's) performance on seminar and laboratory tasks – see the ISAD learning and teaching schedule for details. This could be considered the most important type of feedback as it enables you to *develop* your knowledge, understanding and skills before you are summatively assessed and awarded a mark.

Summative (to measure learning)

You will receive your feedback for the portfolio coursework on week commencing **11th April 2011**. During this week, your Seminar Tutor will provide the following *minimum* feedback online:

- Your group mark;
- A feedback comment (a statement regarding the quality of your work)
- A feed forward comment (a statement regarding how you can develop your knowledge and skills for the future)

Clearly, feedback provided on your coursework is only for developmental purposes so that you can improve for the next assessment or subject-related module.

V. Moderation

The Moderation Process

As with all assessments, this assessment is subject to a two stage moderation process. Firstly, the specification (including the assessment criteria) is considered by the module moderator (usually a member of the module team) to check for clarity, appropriateness and accuracy. Secondly, the marks are considered by the module team to check for consistency and fairness, and to correct any mistakes.

VI. Template for 'Colleague Contribution Score' Email

If you consider one or more of your group member(s) to have not contributed equally to the group work and for you have reasonably been unable to resolve the issue, then you are encouraged to submit an email to the module leader no later than 5pm on 18th March 2011. Emails received after this time will not be considered.

Instructions

The email you send must be structured and issued in the manner described below. Failure to adhere to these instructions may result in your email being invalid and thus ignored.

- The email must be sent to Dr Jon Tepper, the module leader via: Jonathan.Tepper@ntu.ac.uk
- The subject of the email must contain the following information: 'ISAD contribution scores by ' followed by your student number, name, and seminar group
- The body of the email must contain the following for each of the group members you are scoring:
 - Group colleague's student number, name, contribution score and a brief explanation of why this person should not receive the full mark and why you have not been able to resolve this issue sooner.

Contribution scores must be from between 0 to 3, where:

0=No contribution 1=Little contribution 2=Contributed less than most 3=Contributed