6CC515

Module Handbook

Emerging IT Product Development
AY: 2014/15

Module Team

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Schedule of work
6CC515: Emerging IT Product Development

Draft Work plan Schedule

Week No	LECTURE (Mon 13:00-14:00)	PRACTICAL* (Wed 09:00-11:00) or (Wed 11:00-13:00)	SEMINAR (Wed 17:00-18:00)
1	Introduction to the module **ASSIGNMENT 1 OUT**		
2	Web Services, Grids and Clouds	Activity	**Presentations**
3	Crowd Sourcing and Internet of Things	Activity	**Presentations**
4	Social Networking, Analytics and Long-term Vision	Activity	**Presentations**
5	**Consolidation**	**Assignment 1 Progress Check (1-1 tutorial)**	
6	**Assignment 1 Progress Check (1-1 tutorial)**	**Assignment 1 Progress Check (1-1 tutorial)**	**Assignment 1 Progress Check (1-1 tutorial)**
7	**Assignment 1 Progress Check (1-1 tutorial)**	**Assignment 1 Progress Check (1-1 tutorial)**	**Assignment 1 Progress Check (1-1 tutorial)**
8	Mid-semester Feedback **ASSINGMENT 1 IN**	**ASSIGNMENT 1 Presentations**	
9	**ASSINGMENT 2 OUT**	**Assignment 2 Progress Check (group tutorial)**	**Assignment 2 Progress Check (group tutorial)**
10	Guest Lecture/Paper Discussion	**Assignment 2 Progress Check (group tutorial)**	**Assignment 2 Progress Check (group tutorial)**
11	**Assignment 2 Progress Check (group tutorial)**	**Assignment 2 Progress Check (group tutorial)**	**Assignment 2 Progress Check (group tutorial)**
12	Feedback/Revision	**ASSIGNMENT 2 Presentations**	
13	**ASSINGMENT 2 IN**		

Key:	Session	No Session	1-1 tutorial for Assignment 1	Group tutorial for Assignment 2

* The number of practical sessions will be defined by the number of enrolled students and determined within the first 2-3 weeks.

• **During a consolidation session, you will spend your time to further your understanding about the assignment and the subjects discussed without the tutor's supervision.**

NOTE: The best way to contact me is by email.

6CC515: Emerging IT Product Development
ACCESS TO MODULE INFORMATION

Description and Rationale

Emerging technologies have become an area of growing importance both in research and industry. This is mainly due to the Future Internet as a means to foster innovation towards creating and sustaining competitive advantage. These emerging IT products often need to been seen both as distinct services but also as integrated services functioning in a customised, synergetic and ad-hoc manner. The module will expose students to these cutting edge IT developments including but not limited to web services, data mashups, crowd sourcing, social networking, grid and cloud computing, context-aware, Internet of Things and other next generation technologies as they emerge and as the tools to support current challenges. Apart from the developmental aspects, students will be prompted to identify opportunities and provide future direction for emerging IT utilisation. Within this context, a particular focus is on developing the critical thinking to evaluate aforementioned developments and on applying rational and appropriate methods to selecting these when produced with a variety of choices. While, these technologies will be analysed to determine their applicability and appropriateness for and impact from their adoption in the real world, the Sustainable Information and Corporate Governance module will take a complementary role by critically evaluating their sustainable governance in terms of ethics, implications and professionalism.

Learning Outcomes
On successful completion of the module, students will be able to:
•   Be conversant and demonstrate higher analytical skills and critical understanding about developments in emerging technologies, and demonstrate the ability to make objective, rational decisions towards their adoption in the real world
•   Be able to identify and apply emerging technologies tools towards the development of an advanced IT product as well as justify and evaluate their developmental decisions

Teaching and Learning Strategies

All activities related to learning, teaching and assessment (LTA) will be delivered with a view to providing parity of opportunity in the learning experience for all students. As befits Level 6 study, the learning experience is quite grounded upon an enquiry-based approach. Students will develop their own autonomy by working alongside research active academic staff, to embed rigour, academic integrity and ultimately, professionalism into the learning experience. Teaching is envisioned as being highly interactive, with students taking part in discussions and mini-presentations to explore the theoretical and conceptual foundations, whilst tutor-led exercises will enable students to evaluate various emerging technologies.

Specifically, lectures – including guest lectures – will be used to review and introduce the students to the concepts and tools for advanced web development as a whole into their chosen field of application. These lectures will discuss both theoretical and practical issues and the students will be guided towards in-depth research papers reading. Guest lectures may be used as an additional vehicle to discuss and elaborate industry scenarios. Students will also be engaged with activities and present their understanding of the taught elements to their fellow peers via mini-presentations (workshops). Software demonstrations, practical exercises, activities as well as self-study directed learning will be used to assist and develop students' abilities as appropriate. The assessment procedure is designed to complement the teaching schedule outlined above. The module will involve group dynamics and formal report writing. Materials for the module will be made available via the virtual learning environment (currently blackboard).

*In order to cover the depth of the subject area, it is considered imperative students undertake weekly self-study to support their theoretical understanding as well as their practical skills.

Assessment Strategy

Since the module adopts an enquiry based approach to learning, you will be required to explore different options for evidencing your learning, with your peers, and in response to a critical appraisal of your own abilities. As such, with the guidance of the tutor and within the constraints of the assessment framework for the module, you will have the opportunity to be involved in the design of the assessment instruments. This process will be overseen by your tutor, to ensure that you are able to demonstrate behaviours that evidence your achievement of the learning outcomes.

Assessment Weighting: 100% CW (Coursework)

CW1:   40% weighting: Learning outcomes to be assessed: 1
CW2:   60% weighting: Learning outcomes to be assessed: 2

Specifically,

Assignment 1 – 40%, Due week 8 - Learning outcomes to be assessed: 1
Individuals will be required to critically author a research essay proposing the possible adoption of a set of emerging technologies in a real world scenario. The research essay will attract up to 70 marks. An up to 15 extra marks will be added on to those students who have submitted and/or made a presentation during the weeks 2-4. Finally, extra marks to the total of 15 marks will be added on to those students who made a 5' presentation of their research essay (fixed 10 marks) and on to those students who peer review others' presentations (fixed 5 marks).

Assignment 2 – 60%, Due week 12 - Learning outcomes to be assessed: 2
Given a set of detailed requirements, the brief will require group (4-5 members) development, implementation and presentation of an advanced IT product using emerging technologies. Groups will require documenting and justifying their product (project output) development and technical decisions in a short report.

Extensions are provided through formal University procedures only.

Students should note that apart from this module booklet additional materials will made available weekly on the 6CC515 Blackboard site. Material may include but not limited to:
➢ Lecture notes
➢ Research and white papers
➢ Guides and practical activities
➢ Assessment details

Each student can access the materials prior to the Lecture or Practical and may bring the notes with them to the session. Materials will be always available a week ahead the delivery schedule.

Note:
You will need to devote at least 10 additional hours per week on the self-study work without this you may find work extremely difficult which may seriously disadvantage you in the assignments.

Software & Technologies used on this Module
Content management systems such as Joomla, MySQL, PHP

Reading List

There are no key or essential texts for the theoretical aspect of the module. Given the rapidly changing nature of the subject, students will be advised to search for, evaluate, and select relevant instructional material from white papers, academic journals, the Web, and traditional publications (peer reviewed conference proceedings, edited books and journals).
Recommended books' reading (indicative list):

- *Alonso, G., Casati, F., Kuno, H. and Machiraju, V. (2010): Web Services: Concepts, Architectures and Applications (Data-Centric Systems and Applications)*
- *Antonopoulos, N. and Gillam, L. (2010): Cloud Computing: Principles, Systems and Applications (Computer Communications and Networks)*
- *Bessis, N. and Dobre, C. (2014). Big Data and Internet of Things: A Roadmap for Smart Environments, "Studies in Computational Intelligence", Springer*
- *Bessis, N., Xhafa, F. Varvarigou, D., Hill, R. and Li, M. (2013): Internet of Things and Inter-cooperative Computational Technologies for Collective Intelligence, "Studies in Computational Intelligence", Springer*
- *Bessis, N. and Xhafa, F. (2011): Next Generation Data Technologies for Collective Computational Intelligence, "Studies in Computational Intelligence", Springer*
- *Buyya, R., Broberg J. and Goscinski, A. M. (2011): Cloud Computing: Principles and Paradigms (Wiley Series on Parallel and Distributed Computing)*
- *Chow, S-W. (2007): PHP Web 2.0 Mashup Projects: Practical PHP Mashups with Google Maps, Flickr, Amazon, YouTube, MSN Search, Yahoo!: Create practical mashups in PHP)*
- *Foster, I. and Kesselman, C. (2004): The Grid: Blueprint for a New Computing Infrastructure, Morgan Kaufmann*
- *Erl, T. (2005): Service-Oriented Architecture: Concepts, Technology, and Design, Prentice Hall*
- *Governor, J., Hinchcliffe, D. and Duane, N. (2009): Web 2.0 Architectures: What entrepreneurs and information architects need to know, Adobe Dev Library*
- *Linthicum, D. (2003): Next Generation Application Integration: From Simple Information to Web Services, Addison-Wesley Information Technology*
- *Li, M. and Baker, M. (2005): The Grid: Core Technologies, Wiley*
- *Mehta, N. (2008): Mobile Web Development: Building mobile websites, SMS and MMS messaging, mobile payments, and automated voice call systems with XHTML MP, WCSS, and mobile AJAX*

Recommended journals' reading (indicative list):
- *Journal of Distributed Systems and Technologies*
- *Journal of Strategic Information Systems*
- *Journal Business Information Systems*
- *Journal of Object Technology*
- *IEEE Distributed Systems*
- *IEEE Parallel and Distributed Technology Systems and Applications*
- *IEEE Transaction On Parallel & Distributed Computing*

Recommended web sites' reading (indicative list):
- *http://www.w3.org*
- *http://www.gridcomputing.com*
- *http://www.nesc.ac.uk*
- *http://www.egee.nesc.ac.uk/index.html*
- *http://www.urban-atmospheres.net/CitizenScience/*
- *http://www.w3schools.com/*

DECLARATION ON ASSESSMENT & FEEDBACK:

Please read the Criteria for Assessment to understand how your grade is awarded. The criteria for each assignment are available from the in-course assignment specification. If the criteria are not clear to you, please do ask me. It saves time and reduces uncertainty. Both Assignments 1 and 2 briefs and assessment criteria are available in advance from week 1.

The purpose of assessment is for you to demonstrate evidence of attainment. The purpose of providing you with feedback is to clarify and help you understand things which effectively increase your chance to improve attainment in the future.

In this module, you will experience both formative and summative strategies. In contrast with summative, a formative refers to receiving feedback on a work in progress. For example, activities and seminar sessions during weeks 2-4 are formative. Similarly, all assignment progress check sessions are also of formative nature as the feedback provided helps you understand your strengths and highlight your areas for improvement which in turn, helps you develop your assignment final submission. In this module, both formative and summative strategies will be evident via both formal and informal means.

Formal feedback on your assignment submission will be always prompt by making the feedback available within 2 weeks time from the day of submission. Apart from receiving a grade to the assignment, I will provide you with annotations and detailed commentary. Make sure you read these prior to raising any questions. I will be very happy to further provide you with 1-1 feedback should you ask for it. To do so, please either email me to book an appointment or come along in my office on a Monday between 11:00-12:30.

Continuous informal feedback will be given during the seminar sessions and also, via regular assignment progress checks. Scheduled 1-1 progress checks for assignment 1 are taking place during weeks 5 and 7. Scheduled group based progress checks for assignment 2 are taking place during weeks 9-11. For assignment 2 alone, you will demonstrate your practical work on week 12 and receive instant feedback. You may wish to take advantage of the instant feedback and work on the identified areas for improvement with the view to submit the final assignment 2 material by week 13.

All marks and feedback are moderated by a second tutor before these will be released to you. These are also subject to, a further moderation by an external examiner on a sample basis and their validation through the relevant examination board. The UK national standard method ensures that assessment arrangements and marking have been fair.

For more details, see the module handbook, the weekly plan and the in-course assignments specification.

University of Derby
College of Engineering & Technology
        Department of Computing & Maths

In-course Assignment Specification

Module Code and Title: 6CC515 – Emerging IT Product Development	
Assignment No. and Title: 1, Research Essay	
Assessment Tutor: Prof Nik Bessis	Weighting Towards Module Grade: 40%
Date Set: 22nd September 2014	Hand-In Deadline Date: Mon 10th Nov 2014 9PM

Submissions after the Deadline
Recognising that deadlines are an integral part of professional workplace practice, the University expects students to meet all agreed deadlines for submission of assessments. However, the University acknowledges that there may be circumstances which prevent students from meeting deadlines. There are now 3 distinct processes in place to deal with differing student circumstances   1) Assessed Extended Deadline (AED): Students with disabilities or long term health issues are entitled to a Support Plan.   2) Exceptional Extenuating Circumstances (EEC): The EEC policy applies to situations where serious, unforeseen circumstances prevent the student from completing the assignment on time or to the normal standard.   http://www.derby.ac.uk/files/part_i_exceptional_extenuating_circumstances.pdf   3) Late Submission: Requests for late submission will be made to the relevant Subject Manager in the School (or Head of Joint Honours for joint honours students) who can authorise an extension of up to a maximum of one week.   http://www.derby.ac.uk/files/part_f_assessment_regulations_ug_programmes.pdf

Level of Collaboration: Individual

Learning Outcomes covered in this Assignment:
1.   Demonstrate a comprehensive and critical familiarity with available Web-based application implementation options, and demonstrate the ability to make objective, rational decisions about Web-based application development issues.   2.   Be able to identify and justify the design decisions involved in implementing full featured, multi-function Web sites, employing typical features such as electronic catalogues, forums, social networking, content management, search facilities, shopping carts, payment facilities, and user authentication and preference mechanisms.
Criteria for Assessment: See Level 6 Marking Scheme pages and 'Follow these STEPS carefully!' section on the Assignment 1 brief.

Level 6 Marking Scheme:

Grade	Element	Descriptor
100-90%	**Knowledge**	The work is exceptional, of publishable quality and all claims made are error-free. The work illustrates a very significant understanding of the proposed need and an outstanding awareness of the surrounding issues. There is evidence of extensive reading and synthesis of literature review findings leading to the proposed solution. The proposed solution demonstrates an outstanding level of technical detail.
	Criticality	The work demonstrates an exceptional justification of all analytical and conclusive claims made. There is an outstanding critique of relevant emerging technologies that are linked to the proposed solution. The work shows an exceptional, critical engagement when describing complex ideas and models at both theoretical and conceptual levels.
	Application	An exceptional adherence to the provided template. All content is provided in a complete, consistent, coherent, logical and structural way. The proposed solution reflects elements of creativity and innovation or an aptitude for applying knowledge in unusual and/or novel circumstances. The proposed solution is described using one or more self-developed diagrams and/or visuals. Both diagrams/visuals and their description are of exceptional quality. Referencing is presented in a numerical or Harvard style only. All third party work is cited in text.
	Evaluation	The work shows an exceptional elaboration of literature review findings by contrasting and evaluating current solutions used in the identified area that it is claimed that has room for improvement (need). The work shows an exceptional discussion and elaboration of literature review on a range of emerging technologies that are relevant to the identified need and proposed solution.
	Communication	The work is formal and engages the target readers. It is communicated with an exceptional degree of authority. The title, abstract, keywords, introduction, section headings and conclusion reflect their contents in an exceptional and purposeful manner. An exceptional level of academic language is used throughout and this is grounded in an exceptional choice of 5 or more key references.
89-80%	**Knowledge**	The work is excellent, of publishable quality and all claims made are almost error-free. The work illustrates a significant understanding of the proposed need and an excellent awareness of the surrounding issues. There is evidence of extensive reading and synthesis of literature review findings leading to the proposed solution. The proposed solution demonstrates an excellent level of technical detail.
	Criticality	The work demonstrates an excellent justification of all analytical and conclusive claims made. There is an excellent critique of relevant emerging technologies that are linked to the proposed solution. The work shows an excellent, critical engagement when describing complex ideas and models at both theoretical and conceptual levels.
	Application	An excellent adherence to the provided template. All content is provided in an almost complete, consistent, coherent, logical and structural way. The proposed solution reflects elements of creativity and innovation or an aptitude for applying knowledge in unusual and/or novel circumstances. The proposed solution is described using one or more self-developed diagrams and/or visuals. Both diagrams/visuals and their description are of excellent quality. Referencing is presented in a numerical or Harvard style only. All third party work is cited in text.
	Evaluation	The work shows an excellent elaboration of literature review findings by contrasting and evaluating current solutions used in the identified area that it is claimed that has room for improvement (need). The work shows an excellent discussion and elaboration of literature review on a range of emerging technologies that are relevant to the identified need and proposed solution.
	Communication	The work is formal and engages the target readers. It is communicated with an excellent degree of authority. The title, abstract, keywords, introduction, section headings and conclusion should purposefully reflect their contents in an excellent and purposeful manner. An excellent level of academic language is used throughout and this is grounded in an excellent choice of 5 or more key references.
79-70%	**Knowledge**	The work is extremely good, of publishable quality and all claims made are reasonably error-free. The work illustrates an extremely good understanding of the proposed need and an extremely good awareness of the surrounding issues. There is evidence of extensive reading and synthesis of literature review findings leading to the

		proposed solution. The proposed solution demonstrates an extremely good level of technical detail.
	Criticality	The work demonstrates an extremely good justification of all analytical and conclusive claims made. There is an extremely good critique of relevant emerging technologies that are linked to the proposed solution. The work shows an extremely good, critical engagement when describing complex ideas and models at both theoretical and conceptual levels.
	Application	An extremely good adherence to the provided template. All content is provided in an almost complete, consistent, coherent, logical and structural way. The proposed solution reflects elements of creativity and innovation or an aptitude for applying knowledge in unusual and/or novel circumstances as well as to more typical work-based scenarios. The proposed solution is described using one or more self-developed diagrams and/or visuals. Both diagrams/visuals and their description are of extremely good quality. Referencing is presented in a numerical or Harvard style only. All third party work is cited in text.
	Evaluation	The work shows an extremely good elaboration of literature review findings by contrasting and evaluating current solutions used in the identified area that it is claimed that has room for improvement (need). The work shows an extremely good discussion and elaboration of literature review on a range of emerging technologies that are relevant to the identified need and proposed solution.
	Communication	The work is formal and engages the target readers. It is communicated with an extremely good degree of authority. The title, abstract, keywords, introduction, section headings and conclusion should purposefully reflect their contents in an extremely good and purposeful manner. An extremely good level of academic language is used throughout and this is grounded in an extremely good choice of 5 or more key references.
69-60%	**Knowledge**	The work is very good, potentially of publishable quality and all claims made are reasonably error-free. The work illustrates a very good understanding of the proposed need and a very good awareness of the surrounding issues. There is evidence of a lot of reading and synthesis of literature review findings leading to the proposed solution. The proposed solution demonstrates a very good level of technical detail.
	Criticality	The work demonstrates a very good justification of most analytical and conclusive claims made. There is a very good critique of relevant emerging technologies that are linked to the proposed solution. The work shows a very good, critical engagement when describing complex ideas and models at theoretical and/or conceptual levels.
	Application	A very good adherence to the provided template. Most content is provided in an almost complete, consistent, coherent, logical and structural way. The proposed solution reflects an aptitude for applying knowledge in unusual and/or novel circumstances as well as to more typical work-based scenarios. The proposed solution is described using one or more self-developed diagrams and/or visuals. Both diagrams/visuals and their description are of very good quality. Referencing is presented in a numerical or Harvard style only. All third party work is cited in text.
	Evaluation	The work shows a very good elaboration of literature review findings by contrasting and evaluating current solutions used in the identified area that it is claimed that has room for improvement (need). The work shows a very good discussion and elaboration of literature review on a range of emerging technologies that are relevant to the identified need and proposed solution.
	Communication	The work is almost formal and engages the target readers. It is communicated with a very good degree of authority. The title, abstract, keywords, introduction, section headings and conclusion should purposefully reflect their contents in a very good and purposeful manner. A very good level of academic language is used throughout and this is grounded in a very good choice of 5 or more key references.
59-50%	**Knowledge**	The work is good and most claims made are reasonably error-free. The work illustrates a good understanding of the proposed need and a good awareness of the surrounding issues. There is evidence of reading and synthesis of literature review findings leading to the proposed solution. The proposed solution demonstrates a good level of technical detail.
	Criticality	The work demonstrates a good justification of some analytical and conclusive claims made. There is a good critique of relevant emerging technologies that are linked to the proposed solution. The work shows a good, critical engagement when describing complex ideas and models at theoretical and/or conceptual levels.

	Application	A good adherence to the provided template. Some content is provided in a complete, consistent, coherent, logical and structural way. The proposed solution reflects an aptitude for applying knowledge in more typical work-based scenarios. The proposed solution is described using one or more self-developed diagrams and/or visuals. Both diagrams/visuals and their description are of good quality. Referencing is presented in a numerical or Harvard style only. All third party work is cited in text.	
	Evaluation	The work shows a good elaboration of literature review findings by contrasting and evaluating current solutions used in the identified area that it is claimed that has room for improvement (need). The work shows a good discussion and elaboration of literature review on an almost complete range of emerging technologies that are relevant to the identified need and proposed solution.	
	Communication	The work is somehow formal and engages the target readers. It is communicated with a good degree of authority. The title, abstract, keywords, introduction, section headings and conclusion should purposefully reflect their contents in a good and purposeful manner. A good level of academic language is used throughout and this is grounded in a good choice of 4-5 key references.	
49-40%	**Knowledge**	The work is satisfactory and few claims made are error-free. The work illustrates a satisfactory understanding of the proposed need and a satisfactory awareness of the surrounding issues. There is some evidence of reading and with few evidence of synthesis of literature review findings leading to the proposed solution. The proposed solution demonstrates a satisfactory level of technical detail.	
	Criticality	The work demonstrates a satisfactory justification of few analytical and conclusive claims made. There is a satisfactory critique of relevant emerging technologies that are linked to the proposed solution. The work shows a satisfactory engagement when describing complex ideas and models at theoretical or conceptual levels.	
	Application	A satisfactory adherence to the provided template. No much of content is provided in a complete, consistent, coherent, logical and structural way. The proposed solution reflects application of knowledge in very typical scenarios. The proposed solution maybe described using one or more self-developed diagrams and/or visuals. If available, both diagrams/visuals and their description are of satisfactory quality. Referencing is presented in a numerical, Harvard styles or a mixture of them. Most third party work is cited in text.	
	Evaluation	The work shows a satisfactory elaboration of literature review findings by contrasting and evaluating current solutions used in the identified area that it is claimed that has room for improvement (need). The work shows a satisfactory discussion and elaboration of literature review on a limited range of emerging technologies that are relevant to the identified need and proposed solution.	
	Communication	The work is less formal and shows little attempt to engage the target readers. It is communicated with a satisfactory degree of authority. The title, abstract, keywords, introduction, section headings and conclusion should purposefully reflect their contents in a satisfactory and purposeful manner. A satisfactory level of academic language is used and this is grounded in a satisfactory choice of 3-5 key references.	
39-35%	**Knowledge**	The work is limited with several errors. The work illustrates a limited understanding of the proposed need and a limited awareness of the surrounding issues. There is limited evidence of reading and with little evidence of synthesis of literature review findings leading to the proposed solution. The proposed solution demonstrates a limited level of technical detail.	
	Criticality	The work demonstrates a limited justification of few analytical and conclusive claims made. There is a limited critique of relevant emerging technologies that are linked to the proposed solution. The work shows a limited engagement when describing complex ideas and models at theoretical or conceptual levels.	
	Application	A limited adherence to the provided template. Limited content is provided in a complete, consistent, coherent, logical and structural way. The proposed solution reflects limited application of knowledge in even, simple and typical scenarios. The proposed solution maybe described using one or more self-developed diagrams and/or visuals. If available, both diagrams/visuals and their description are of very limited quality. Referencing is presented in a numerical, Harvard styles or a mixture of them. Most third party work is cited in text.	
	Evaluation	The work shows limited elaboration of literature review findings with regard to the current solutions used in the identified area that it is claimed that has room for improvement (need). The work shows virtually no attempt to discuss and elaborate	

		literature review on any emerging technology (-ies) that is/are relevant to the identified need and proposed solution.
	Communication	The work shows little attempt to engage the target readers. The title, abstract, keywords, introduction, section headings and conclusion purposefully reflect their contents in a limited manner. A limited level of academic language is used and this is grounded in a limited choice of 1-2 key references.
34-21%	**Knowledge**	The work is poor with several errors. The work illustrates a poor understanding of the proposed need and a very poor awareness of the surrounding issues. There is little evidence of reading and poor attempt of synthesis of literature review findings leading to the proposed solution, if any. The proposed solution demonstrates a very poor level of technical detail.
	Criticality	The work demonstrates a very limited justification of any analytical and conclusive claims made. There is very poor critique of relevant emerging technologies that are linked to the proposed solution. The work shows virtually no attempt to engage when describing ideas and models at theoretical or conceptual levels.
	Application	Poor adherence to the provided template. Most content is provided in a non-complete, consistent, coherent, logical and structural way. The proposed solution reflects very poor application of knowledge in any short of scenarios. The proposed solution, if any maybe described using diagrams and/or visuals. If available, both diagrams/visuals and their description are of poor quality. Referencing is poor. Most third party work is cited in text.
	Evaluation	The work shows very poor elaboration of literature review findings with regard to the current solutions used in the identified area that it is claimed that has room for improvement (need). The work shows virtually no attempt to discuss and elaborate literature review on any emerging technology (-ies) that is/are relevant to the identified need and proposed solution.
	Communication	The work shows very little attempt to engage the target readers. The title, abstract, keywords, introduction, section headings and conclusion purposefully reflect their contents in a very poor manner. A poor level of academic language is used and this is evident by the limited choice of key references, if any.
20-5%	**Knowledge**	The work is very poor with many errors. It illustrates a very poor understanding of the proposed need and virtually no awareness of the surrounding issues. There is virtually no evidence of reading of relevant reading and virtually no attempt of synthesis of literature review findings leading to the proposed solution, if any.
	Criticality	The work demonstrates no justification of any analytical and conclusive claims made. There is no critique of relevant emerging technologies that are linked to the proposed solution. The work shows virtually no attempt to describe any ideas or models at either theoretical or conceptual levels.
	Application	Very poor adherence, if any to the provided template. Content is provided in a non-complete, consistent, coherent, logical and structural way. The proposed solution reflects others work already published.
	Evaluation	The work shows no elaboration of literature review findings with regard to the current solutions used in the identified area (need), if any. The work shows no attempt to discuss and elaborate literature review on any emerging technology (-ies) that is/are relevant to the identified need and proposed solution.
	Communication	The work shows no attempt to engage the target readers. The title, abstract, keywords, introduction, section headings and conclusion purposefully do not reflect their contents. A very poor level of academic language is used and this is evident by the limited choice of key references, if any.
4-0%	**Knowledge**	Nothing of merit or value.
	Criticality	Nothing of merit or value.
	Application	Nothing of merit or value.
	Evaluation	Nothing of merit or value.
	Communication	Nothing of merit or value.

6CC515: Emerging IT Product Development
Individual Assignment 1 brief – 40%

Assignment 1: Research Essay, Due week 8, Mon 10th November 2014 9PM
Individuals are required to use the 6CC515 Assignment 1 Template (available from Blackboard) to produce a research essay totaling no less than 3 pages and no more than 4 pages long including the referencing list. The content must be of such good quality that it could be considered for presentation at a conference or publication in a journal. In fact, some students from last years cohorts published their papers in an IEEE workshop.

Following weeks 2-4 material, discussions and activities, individual students are required to identify an area in which a possible application of emerging technologies (that have been taught during weeks 2-4 lecture sessions) could make improve a situation and/or our understanding in a real or fictional setting. Students are free to follow up their weekly activities outcomes.

Follow these STEPS carefully!
1. Use the provided template and produce an essay totaling 3 to 4 pages long [up to 5 marks]
2. Provide a title, your affiliation details, an abstract and 5 keywords [up to 5 marks]
3. Provide an introduction detailing the focus of your essay [up to 5 marks]
4. Give a short description of the need of what you propose, i.e. critically justify - with the use of references - why what you propose is important, current and has room for improvement. It is expected that you will elaborate literature review findings to supplement and sustain any arguments you make. Feel free to give a name of your choice to the section [up to 15 marks]
5. Give an overview of, and contrast possible emerging technologies, which could be used as the means to improve the situation. The expectation is that the section should be a literature review based overview. Explain why the selected technology/-ies is/are of relevance to the identified need. Feel free to give a name of your choice to the section [up to 15 marks]
6. Give an overview of your proposed solution. Note that you must not produce any practical developments; your proposed solution should be at a theoretical and/or conceptual level. You may draw self-developed diagrams and textual descriptions to support your proposed solution. Feel free to give a name of your choice to the section [up to 15 marks]
7. Provide a conclusions section summarising your points [up to 5 marks]
8. Provide us a list of references that have been used in your essay [up to 5 marks]

Quality and originality of ideas, evidence of literature review, demonstration of up to date knowledge, together with appropriate comprehensive referencing is of top importance.

Things to avoid!
- Please do not present a collection of unreferenced blocks of text, there will be no contribution from your side and thus, you will attract a Fail grade, as you will not meet the assignment learning outcomes, as well as you may considered for plagiarism.

- PLAGIARISM IS AN ACADEMIC OFFENCE AND IT WILL BE HEAVILY PENALISED
  It is very important to reference your material from reliable research journals and conference proceedings and clearly indicate these citations using quotation marks. It is always good to upload a draft version of your essay on Turnit in to realise plagiarism and similarity levels.

MARKS and HOW THESE ARE AWARDED:
- During weeks 2-4 you will be expected to produce a presentation based on a task related to the topic discussed during that lecture. For every presentation you submit you will receive 5 marks (fixed) to a total of 10 marks so, you are required to submit no more than 2 out of 3

presentations. You can receive 5 extra marks (fixed) for delivering one of the presentations during the relevant seminar session. Additional submissions/presentations do not attract more marks. The total of, up to 15 marks will count as part of Assignment 1. These are due every week and in between weeks 2-4 only. More details will be available during the class.

- The 3 to 4 pages long research essay attracts up to 70 marks. This is due week 8.
- During week 8 practical session you are required to make a 5' presentation about your research essay in front of your class. The presentation should be short, visual and attractive enough to sell the story. By making the presentation you will receive 10 marks (fixed). You will also required to peer review few presentations made by other fellow students. By peer reviewing others you will receive 5 marks (fixed). Further details will be made available during the class.

REWARD:
- The outcomes of the peer review exercise will be used to award the best 3 presentations with an Amazon Voucher each. The first best will attract £200, the second best £100 and the third best £50. All three presenters will also receive a certificate of achievement.

A pass requires 40 out of 100 marks, the more marks the more chances for a better grade.

SPECIAL NOTES:

All information associated to this assignment is available at the Assignment section on Blackboard. As more information relevant to this assignment will be posted during the course of study please pay regular visits to the Blackboard site.

In-progress checks will take place during week 5 and 7. The in-progress check is to provide you a formative feedback of the progress made so far and recommend you possible areas for improvement prior to the formal submission.

Formal submission: This is on Wed 10th November 2014, 9pm. You must submit your research essay via Turnit in only. No other form of submission will be accepted. Please ensure that you keep the automated email receipt from Turnit in as a proof of your submission. Please familiarise with using Turnit in submission feature prior to the formal submission data and time. It is strongly suggested to upload your work before the deadline. You will have unlimited chances to re-upload updated versions by the deadline. Note that re-uploads will replace previously uploaded versions. Failure to submit your work by the specified deadline and without an authorized extension will result to a FAIL grade. For detailed information about Late Submissions terms see the "In Course Assignment Specification" page.

University of Derby
College of Engineering & Technology
     Department of Computing & Maths

In-course Assignment Specification

Module Code and Title: 6CC515 – Emerging IT Product Development	
Assignment No. and Title: 2, Product Development	
Assessment Tutor: Prof Nik Bessis	**Weighting Towards Module Grade: 60%**
Date Set: 22ⁿᵈ September 2014	**Hand-In Deadline Date: Mon 15ᵗʰ Dec 2014 (Presentation due Wed 10ᵗʰ Dec 2014)**

Submissions after the Deadline

Recognising that deadlines are an integral part of professional workplace practice, the University expects students to meet all agreed deadlines for submission of assessments. However, the University acknowledges that there may be circumstances which prevent students from meeting deadlines. There are now 3 distinct processes in place to deal with differing student circumstances
 	
   4) Assessed Extended Deadline (AED): Students with disabilities or long term health issues are entitled to a Support Plan.
   5) Exceptional Extenuating Circumstances (EEC): The EEC policy applies to situations where serious, unforeseen circumstances prevent the student from completing the assignment on time or to the normal standard.
       http://www.derby.ac.uk/files/part_i_exceptional_extenuating_circumstances.pdf
   3) Late Submission: Requests for late submission will be made to the relevant Subject Manager in the School (or Head of Joint Honours for joint honours students) who can authorise an extension of up to a maximum of one week.
       http://www.derby.ac.uk/files/part_f_assessment_regulations_ug_programmes.pdf

Level of Collaboration: Group

Learning Outcomes covered in this Assignment:
1.~~   Demonstrate a comprehensive and critical familiarity with available Web-based application implementation options, and demonstrate the ability to make objective, rational decisions about Web-based application development issues.~~ 2.   Be able to identify and justify the design decisions involved in implementing full-featured, multi-function Web sites, employing typical features such as electronic catalogues, forums, social networking, content management, search facilities, shopping carts, payment facilities, and user authentication and preference mechanisms.
Criteria for Assessment: See Level 6 Marking Scheme pages and 'Follow these STEPS carefully!' section on the Assignment 2 brief.

Level 6 Marking Scheme:

Grade	Element	Descriptor
100-90%	Knowledge	The work (emerging IT product and report) is exceptional and of professional quality. There is evidence of extensive requirements analysis leading to the product. The product and its report demonstrate an outstanding level of technical detail.
	Criticality	The work demonstrates an exceptional justification of all design, development & implementation decisions. There is an outstanding critique of relevant emerging IT that are linked to the product. The report shows an exceptional, critical engagement when describing the development.
	Application	An error-free design, development and implementation of the product. The product reflects elements of creativity and innovation and meets all the specification requirements in an exceptional manner. The report details the technical merits of the development. The descriptions including diagrams and visuals are of exceptional quality.
	Evaluation	Evidence that the product is error-free in terms of efficacy, effectiveness and efficiency. The report shows an exceptional discussion and elaboration of literature review on a range of emerging IT that are relevant to the product.
	Communication	The work is formal and engages the target readers. It follows a consistent, coherent, logical and structural way. It is presented with an exceptional degree of authority. An exceptional level of terminology is used throughout. All third party work is acknowledged and cited appropriately.
89-80%	Knowledge	The work (emerging IT product and report) is excellent and almost of professional quality. There is evidence of extensive requirements analysis leading to the product. The product and its report demonstrate an excellent level of technical detail.
	Criticality	The work demonstrates an excellent justification of all design, development & implementation decisions. There is an excellent critique of relevant emerging IT that are linked to the product. The report shows an excellent, critical engagement when describing the development.
	Application	An almost error-free design, development and implementation of the product. The product reflects elements of creativity and innovation or an aptitude for applying knowledge in unusual and/or novel circumstances. It meets all the specification requirements in an excellent manner. The report details the technical merits of the development. The descriptions including diagrams and visuals are of excellent quality.
	Evaluation	Evidence that the product is almost error-free in terms of efficacy, effectiveness and efficiency. The report shows an excellent discussion and elaboration of literature review on a range of emerging IT that are relevant to the product.
	Communication	The work is formal and engages the target readers. It follows a consistent, coherent, logical and structural way. It is presented with an excellent degree of authority. An excellent level of terminology is used throughout. All third party work is acknowledged and cited appropriately.
79-70%	Knowledge	The work (emerging IT product and report) is extremely good and of very high quality. There is evidence of extensive requirements analysis leading to the product. The product and its report demonstrate an extremely good level of technical detail.
	Criticality	The work demonstrates an extremely good justification of all design, development & implementation decisions. There is an extremely good critique of relevant emerging IT that are linked to the product. The report shows an extremely good, critical engagement when describing the development.
	Application	A reasonably error-free design, development and implementation of the product. The product reflects elements of creativity or an aptitude for applying knowledge in unusual and/or novel circumstances as well as to more typical work-based scenarios. It meets all the specification requirements in an extremely good manner. The report details the technical merits of the development. The descriptions including diagrams and visuals are of extremely good quality.
	Evaluation	Evidence that the product is reasonably error-free in terms of efficacy, effectiveness and efficiency. The report shows an extremely good discussion and elaboration of literature review on a range of emerging IT that are relevant to the product.
	Communication	The work is formal and engages the target readers. It follows a consistent, coherent, logical and structural way. It is presented with an extremely good degree of authority. A very high level of terminology is used throughout. All third party work is acknowledged and cited appropriately.
69-60%	Knowledge	The work (emerging IT product and report) is very good and of high quality. There is evidence of extensive requirements analysis leading to the product. The product and its report demonstrate a very good level of technical detail.
	Criticality	The work demonstrates a very good justification of most design, development & implementation decisions. There is a very good critique of relevant emerging IT that are linked to the product. The report shows a very good, critical engagement when describing the development.

	Application	A reasonably error-free design, development and implementation of the product. The product reflects an aptitude for applying knowledge in unusual and/or novel circumstances as well as to more typical work-based scenarios. It meets most of the specification requirements in a very good manner. The report details the technical merits of the development. The descriptions including diagrams and visuals are of very good quality.
	Evaluation	Evidence that the product is reasonably error-free in terms of efficacy, effectiveness and efficiency. The report shows a very good discussion and elaboration of literature review on a range of emerging IT that are relevant to the product.
	Communication	The work is almost formal and engages the target readers. It follows a consistent, coherent, logical and structural way. It is presented with a very good degree of authority. A good level of terminology is used throughout. All third party work is acknowledged and cited appropriately.
59-50%	Knowledge	The work (emerging IT product and report) is good and of reasonable quality. There is evidence of a reasonable requirements analysis leading to the product. The product and its report demonstrate a good level of technical detail.
	Criticality	The work demonstrates a good justification of some design, development & implementation decisions. There is a good critique of relevant emerging IT that are linked to the product. The report shows a good, critical engagement when describing the development.
	Application	A reasonably error-free design, development and implementation of the product. The product reflects an aptitude for applying knowledge in more typical work-based scenarios. It meets most of the specification requirements in a good manner. The report details the technical merits of the development. The descriptions including diagrams and visuals are of good quality.
	Evaluation	Evidence that the product is reasonably error-free in terms of efficacy, effectiveness and efficiency. The report shows a good discussion and elaboration of literature review on a range of emerging IT that are relevant to the product.
	Communication	The work is somehow formal and follows a less consistent, coherent, logical and structural way. It is presented with a good degree of authority. A satisfactory level of terminology is used throughout. All third party work is acknowledged and cited appropriately.
49-40%	Knowledge	The work (emerging IT product and report) is satisfactory quality. There is evidence of requirements analysis leading to the product. The product and its report demonstrate a satisfactory level of technical detail.
	Criticality	The work demonstrates a satisfactory justification of few design, development & implementation decisions. There is a satisfactory critique of relevant emerging IT that are linked to the product. The report shows a satisfactory, critical engagement when describing the development.
	Application	Some errors in the design, development and implementation of the product. The product reflects an aptitude for applying knowledge in typical work-based scenarios. It meets some of the specification requirements in a satisfactory manner. The report details the technical merits of the development. The descriptions including diagrams and visuals are of satisfactory quality.
	Evaluation	Few evidence that the product is error-free in terms of efficacy, effectiveness and efficiency. The report shows some satisfactory discussion and elaboration of literature review on a range of emerging IT that are relevant to the product.
	Communication	The work is less formal. A satisfactory level of terminology is used throughout. Most third party work is acknowledged and cited appropriately.
39-35%	Knowledge	The work (emerging IT product and report) shows limited evidence of requirements analysis leading to the product. The product and its report demonstrate a limited level of technical detail.
	Criticality	The work demonstrates a limited justification of few design, development & implementation decisions. There is a limited critique of relevant emerging IT that are linked to the product. The report shows a limited if any, critical engagement when describing the development.
	Application	Several errors in the design, development and implementation of the product. The product reflects limited application of knowledge in even, simple and typical scenarios. It demonstrates little effort to meet the specification requirements in an acceptable manner. The report and its descriptions including diagrams and visuals (if any) are of limited quality.
	Evaluation	Limited evidence that the product working features are error-free in terms of efficacy, effectiveness and efficiency. The report shows limited discussion and elaboration of literature review on a range of emerging IT that are relevant to the product.
	Communication	The work is limited. A limited level of terminology is used throughout. Referencing of third party work is poor.
34-21%	Knowledge	The work (emerging IT product and report) is of poor standard and it virtually shows no evidence of requirements analysis leading to the product. The product and its report demonstrate a poor level of technical detail.
	Criticality	The work demonstrates a very limited justification of any design, development & implementation decisions. There is virtually no critique of relevant emerging IT that are linked to the product. The

		report shows a very limited if any, critical engagement when describing the development.
	Application	Several errors in the design, development and implementation of the product. The product reflects very poor application of knowledge in even, simple and typical scenarios. It demonstrates no effort to meet the specification requirements in an acceptable manner. The report and its descriptions including diagrams and visuals (if any) are of very limited quality.
	Evaluation	Virtually no evidence that the product working features are error-free. The report shows poor discussion of literature review on any emerging IT that are relevant to the product.
	Communication	The work is very limited. A poor level of terminology is used throughout. Referencing of third party work is very poor.
20-5%	**Knowledge**	The work (emerging IT product and report) is of very poor standard and with no evidence of requirements analysis leading to the product. The product and its report demonstrate a very poor level of technical detail.
	Criticality	The work demonstrates a very poor justification of any design, development & implementation decisions. There is no critique of relevant emerging IT that are linked to the product. The report shows no critical engagement when describing the development.
	Application	Significant errors in the design, development and implementation of the product. The product reflects an unsatisfactory application of knowledge, if any. It demonstrates no effort to meet the specification requirements in an acceptable manner. The report and its descriptions including diagrams and visuals (if any) are of very poor.
	Evaluation	No evidence that the product working features are error-free. The report shows very poor discussion of literature review on any emerging IT that are relevant to the product.
	Communication	The work is very poor. A very poor level of terminology is used throughout. Referencing of third party work is not evident.
4-0%	**Knowledge**	Nothing of merit or value.
	Criticality	Nothing of merit or value.
	Application	Nothing of merit or value.
	Evaluation	Nothing of merit or value.
	Communication	Nothing of merit or value.

6CC515: Emerging IT Product Development
Group Assignment 2 brief – 60%

You are required, in groups of 4-5, to design, develop and implement an emerging IT product development for the following scenario.

Scenario:
"A Tourist Information Kiosk (TIK) system is to be designed to allow travellers access to an electronic one-stop services shop. The TIK can be seen as an initiative developed from several National Tourism Organisations of popular holiday destinations (like UK: London, France: Paris, Portugal: Algarve, Greece: Aegean Islands, etc…), as to promote their attractions and services via allowing tourists to make the most of their holiday experience. Thus, the TIK will aim to provide up to date information about top site destinations, museums, hotels, restaurants, cultural events such as dance, theatres, concerts and other performances taking place on various sites. It is envisaged that a number of the TIKs will be placed in each site of interest. Most importantly, the TIK must allow tourism organisations to promote their attractions and services via allowing tourists to share their past and present holiday experiences (blogs, comments, photos, videos, etc) on their site. The system should be designed in such a way to stimulate and sustain 2-way communication between people who have and/or have not visited the destination's attractions."

Assignment 2: Advanced Web System Presentation Due week 12, Wed 10th Dec 2014
            Advanced Web System Report Due week 13, Mon 15th Dec 2014
Students may use Joomla. Other technologies (i.e. ASP, .NET, JSP, etc) are accepted BUT developments in these platforms WILL NOT BE supported from our labs. System should include sufficient test data to demonstrate functionality.

Follow these STEPS carefully!
The advanced web system must be a functional front-end which enables users to:
  ▪ Register and login [up to 5 marks]
  ▪ Upload content, i.e. text, images, audios and videos [up to 15 marks]
  ▪ Browse through a tag cloud [up to 15 marks]
  ▪ Search content available within the system [up to 10 marks]
  ▪ Read a weather RSS feed [up to 5 marks]
  ▪ Read geo data on a map [up to 20 marks]

MARKS and HOW THESE ARE AWARDED:
  ▪ Groups must make an informal presentation about their advanced web system functionality. The presentation will take place on Wed 10th Dec 2014. The presentation will weight 0 marks but it is to enable correct marking. Students who will not present will be downgraded.
  ▪ Groups must submit - by Mon 15th Dec 2014 – one and only one report containing:
      o The URL of the advanced web system [up to 70 marks]. Marks will be awarded based on the "Follow these STEPS carefully" list above. Students are advised to include a functioning username/password.
      o A user manual explaining the operation and functioning of the system [up to 15 marks]. A user manual encompasses screenshots and short textual descriptions about the advanced web system's functionality.
      o A critical discussion on the design and implementation decisions [up to 15 marks].
  ▪ Individuals must submit a peer review form noting the contribution made by other towards the completion of Assignment 2. The form will weight 0 marks but it is to enable correct marking. Students who will not submit their completed peer review forms will be downgraded.

A pass requires 40 out of 100 total marks, the more marks the more chances for a better grade.

SPECIAL NOTES:

You will split in groups by week 9. It is your responsibility to find/form (in) a group (4-5 team members). Please let Nik know (via email) of your group team members. Otherwise, Nik will form groups on a random basis. May we remind you of the consequences in working in a group you do not want to.

All information associated to this assignment is available at the Assignment section on Blackboard. As more information relevant to this assignment will be posted during the course of study please pay regular visits to the Blackboard site.

In-progress check will take place during weeks 9-11. The in-progress check is to provide you a formative feedback of the progress made so far and recommend you possible areas for improvement prior to the formal submission.

Formal submission: You will demonstrate your assignment 2 work on Wed 10th Dec 2014. During the presentation you will receive instant feedback. You may wish to take advantage of the instant feedback and work on the identified areas for improvement with the view to submit the final assignment 2 material (report and peer review forms) by Mon 15th Dec 2014. You must submit your report via Turnit in only. No other form of submission will be accepted. Please ensure that you keep the automated email receipt from Turnit in as a proof of your submission. In a simlar vein, ensure that you forward the email receipt as well as the feedback annotations and mark to your group team members. Please familiarise with using Turnit in submission feature prior to the formal submission data and time. It is strongly suggested to upload your work before the deadline. You will have unlimited chances to re-upload updated versions by the deadline. Note that re-uploads will replace previously uploaded versions. Failure to submit your work by the specified deadline and without an authorized extension will result to a FAIL grade. For detailed information about Late Submissions terms see the "In Course Assignment Specification" page. Finally, you must submit a printout of your completed peer review form by Mon 15 Dec 2014. To do so, place the form in an envelope and hand-it in to Nik or slide it under his office door in E513.