LIVERPOOL HOPE UNIVERSITY
Est. 1844

Faculty of Science

Department of Mathematics and Computer Science

EXPLORATIONS IN COMPUTER SCIENCE (ADDITIONAL)

Level I

CSCADDI001

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Level I Course Handbook 2018/19

This booklet contains details of one of two 60 Credit units you will be taking to complete your second level (Level I) of study.

Each 60 C unit represents 600 hours of study across the academic year.

Contents

Welcome:

Welcome to the Department of Mathematics and Computer Science at Liverpool Hope University. All of our staff hopes you will enjoy an interesting and worthwhile time at the University and we look forward to working with you over the next academic year. We hope that you have a challenging yet enjoyable time with us and your studies are associated with personal and professional development.

This course handbook provides information about Computer Science (Core) and should help explain the most basic things you will need to know about its organisation. It is not meant to be exhaustive and one of its purposes is to explain how to obtain more information on any given topic when you need it. Many things will only become relevant as your course goes on, so it is a good idea to keep the handbook handy for future reference, but please do not hesitate to ask your tutor if you have any queries.

Best of luck with your forthcoming studies!

Professor Atulya Nagar
Professor of Mathematical Sciences
Dean of the Faculty of Science
Head of Department of Mathematics and Computer Science
Liverpool Hope University

The Course:

The Course Team:

Dr Neil Buckley received his Ph.D. in Computer Science from Liverpool Hope University in 2016, following M.Sc. and B.Sc. in Computer Science from Hope. His Ph.D. concerned a specialised area of cryptography called secret sharing, and he has been working with industry to develop an algorithm for post-quantum securing message and data storage. His research interests also include metaheuristics for advanced problem solving and artificial intelligence.

Expertise: Cryptography, Metaheuristics, Artificial Intelligence, Algorithmic Design, Software and Web Development.

Your Student Representatives:

Your student reps will be elected at the start of term. After the elections their contact details will be included here.

Your External Examiner:

Li Zhang, Northumbria University

Course Aims:

1. A broad introduction to computer science
2. Opportunities to study key areas of computer science
3. Opportunities to develop computational thinking and a systems approach to formulating, critically analysing and solving complex problems
4. The ability to meet the requirement within the computer science industry for graduates who are able to apply appropriate practices within a professional framework

Learning Outcomes:

1. Develop a knowledge and critical understanding of a broad range of computer science principles
2. Deploy appropriate tools, theory, principles and methodologies to analyse a range of computer based systems
3. Design and implement applications drawing on a broad range of solutions

Personal Development:

You course includes weekly tutorials with your tutor which are compulsory. These are included in the timetable grid below. These are intended to allow you to get to know your

tutor and to understand the support they can offer. The tutorials also give you an opportunity to continue your personal development and to reflect on the progress that you are making.

BCS Student Membership

As a student / apprentice member you can enjoy a range of benefits to aid your studies, including the latest news, reviews, networking and job opportunities.

Free access to market research material, to 300 online technology, creative and business books, and to over 9,000 IT related journals and articles can prove invaluable studying resources. Exclusive and reliable resources such as these support research and broaden industry knowledge and understanding.

Student / apprentice membership of BCS is also your pathway to Professional Membership and Chartered status. Join here or at http://www.bcs.org/category/10970

BCS Student Membership Benefits

Study Resources	Employability support
• Industry news updates by email • Whitepapers and articles • Member discount in BCS bookshop • UK-wide student chapter network: debate with other students • 50+ specialist groups spanning breadth of IT • Career mentoring network • BCS Voices discussion forums • Opportunity to contribute blogs and member magazine • Volunteering opportunities • Prestigious lectures from industry leaders	• CV builder and interview simulator • Soft skills development (e-learning modules) • Interactive aptitude tests • Video advice from real employers • Employer directory • Industry networking at UK branches and specialist groups • Free legal helpline, business and personal • BCS career mentoring network • Browse SFIAplus – IT skills framework online tool • CPD portal and professional development plan • Professional code of conduct – signals integrity and credibility to employers • Path to Professional (MBCS) membership and Chartered status • Use of break-out area in BCS London Covent Garden office

Teaching Schedule:

Different Types of Teaching Sessions:

You should ensure that you are clear about the different formats, requirements and functions of the lectures, seminars (or practicals, workshops etc.) and tutorials within the discipline. Attendance at all sessions is compulsory and will be monitored. If you do not attend you will be asked to meet with your tutor or the HOD and should expect to be given additional tasks to make up for the work you have missed

Tutorials are weekly one-hour sessions. These are intended to focus on the building of relationships (so it is essential that you attend to meet your group each week) and progressing as a group through your coursework's. You should expect to be actively involved in these sessions which will become increasingly student-led as your course progresses. Engagement in the tutorial sessions form part of your assessment.

Seminars are intensive sessions used for skills delivery, application of knowledge, case studies or more practical elements of a course. These are generally in groups of 20-30. You should normally have one 2-hour seminar per week in each 60C unit.

Lectures are used for delivery of key material which is essential to a knowledge base in the specific subject you are studying. You should expect to be provided with an outline of the lecture on Moodle and to take notes from the material delivered by the lecturer.

Homework/Independent Study are used for reinforcement of key material which is essential to a knowledge base in the specific subject you are studying. You should expect to be provided with homework on a weekly basis. Some of the homework forms part of your portfolio assessments. A typical student is expected to work independently for approximately 475 hours for this 60-credit course, of course the more hours you put in the better your grades should be.

Week Commencing	Activity	Topic	Notes
Week 1 01.10.18	Website Development Lecture with Dr Buckley	Introduction to Website Development (XHTML I)	We refresh our knowledge of Website Development concluding with an Introduction to XHTML.
	Computer Networks Lecture with Dr Buckley	Overview	The first lecture introduces the course, including the structure, the assessments and what you can expect from this course.
	Website Development Seminar with Dr Buckley	Team Formation / Laboratory Exercises	This week you will form teams with a maximum of 5 members, you will establish and upload a team contract and arrange a meeting (agenda, time and date) to be held in your tutorial slot. You will then independently work through the laboratory exercises.
	Computer Networks Seminar with Dr Buckley	Team Formation / Roles	You will form a team (maximum 5 members). As a team you will define a team name, team roles of each person (i.e. Leader,

			Chair, Secretary). **Important:** You have until the 7th October 2018 at 12:00 noon to upload your Seminar exercises.
	Tutorial with Dr Buckley	Team Meeting	This is your first team meeting. You should define roles within the team, hold a meeting (which should be minuted), assign each member coursework related tasks, agree agenda for next meeting. **Important:** You have until the 7th October 2018 at 12:00 noon to upload your Team Contract and Minutes of the Meeting – You are assessed on teamwork and engagement.
	Homework	Homework Tasks	You will complete the seminar exercises (if you haven't done this during the seminars).
Week 2 08.10.18	Lecture with Dr Buckley	XHTML Continued	This week we discuss about XHTML using small examples during the lecture. We conclude by discussing program style.
	Computer Networks Lecture with Dr Buckley	Introduction to Computer Networks	This week we discuss the trends in traffic and how these are driven by new services, advances in technology and infrastructure. We also see how businesses are relying more than ever on data communication networks in regard to web, remote access, online transactions, social networking etc. We follow this with a discussion of the need for high-speed LANs, WANs and Mobile Networks.
	Seminar with Dr Buckley	Lab Exercises	You will work independently through the lab exercises.
	Computer Networks Seminar with Dr Buckley	Lab Exercises	You will work independently through the lab exercises. **Important**: You have until the 14th October 2018 at 12:00 noon to upload your Seminar exercises.
	Tutorial with Dr Buckley	Team Meeting	Hold a meeting (which should be minuted), assign each member coursework related tasks, agree agenda for next meeting. **Important**: You have until the 14th October 2018 at 12:00 noon to upload the Minutes of the Meeting – You are assessed on teamwork and engagement.
	Homework	Homework Tasks	You will complete the seminars exercises (if you haven't done this during the seminars).

Week 3 15.10.18	Lecture with Dr Buckley	XHTML II	This week we continue with XHTML
	Computer Networks Lecture with Dr Buckley	Topologies, LAN Protocol Architecture	This week we examine a simplified communications model and emphasize the complexity of communication tasks such as transmission system utilization, Interfacing, Signal Generation, Synchronization, Exchanged Management, Error Detection and Correction, Flow Control, Addressing, Routing, Recovery, Message Formatting, Security and Network Management..
	Seminar with Dr Buckley	Lab Exercises	You will work independently through the lab exercises.
	Seminar with Dr Buckley	Lab Exercises	You will work independently through the lab exercises. Important: You have until the 24th October 2018 at 12:00 noon to upload your Seminar exercises.
	Tutorial with Dr Buckley	Team Meeting	This tutorial is split in two 30 minutes sessions, one for Website Development and one for Networks. For Website Development, you should discuss the tasks assigned at the last meeting and assign new tasks. Important: You have until the 24th October 2018 at 12:00 noon to upload your Minutes of the Meeting.
	Homework	Homework Tasks	You will complete the seminars exercises (if you haven't done this during the seminars).
Week 4 22.10.18	Lecture with Dr Buckley	CSS I	This week we discuss about Cascading Style Sheets or CSS.
	Computer Networks Lecture with Dr Buckley		This week we discuss how data is transmitted, or rather, electromagnetic signals which represent our data. We look at the different medium options and discuss the characteristics of these, for example, fibre, coaxial, twisted pair and wireless. We briefly discuss the cost of these transmission systems and define multiplexing and compression.
	Seminar with Dr Buckley	Lab Exercises	You will work independently through the lab exercises.
	Computer Networks Seminar with Dr Buckley	Lab Exercises	You will work independently through the lab exercises. Important: You have until the

			31st October 2018 at 12:00 noon to upload your Seminar exercises.
	Tutorial with Dr Buckley	Team Meeting	This tutorial is split in two 30 minutes sessions, one for Website Development and one for Networks. For Website Development, you should discuss the tasks assigned at the last meeting and assign new tasks. **Important:** You have until the 31st October 2018 at 12:00 noon to upload your Minutes of the Meeting. **Important:** Portfolio 1 & 2 for Networks will be opened on Monday, 23rd October 2018, 00:00AM and closed on Tuesday, 31 October 2018, 12:00 noon. You must be completed the tasks before the deadline to receive grades.
	Homework	Homework Tasks	You will complete the seminars exercises (if you haven't done this during the seminars).
Week 5 29.10.18	Lecture with Dr Buckley	CSS II	This week we continue discussing about Cascading Style Sheets or CSS.
	Computer Networks Lecture with Dr Buckley		This week we discuss the increasing use of Networks (LANs, WANs and WLANs). We look at Ethernet the most dominant LAN and explain how we can use an access point to extend this LAN. Then we discuss the needs of business organisations before moving to WANs. When discussing WANs we examine WAN technologies, i.e. circuit switching, packet switching, frame relay and ATM.
	Seminar with Dr Buckley	Lab Exercises	You will work independently through the lab exercises.
	Seminar with Dr Buckley	Lab Exercises	You will work on the discussion of networking standard, and artificial neural networks. Important: You have until the 7th November 2018 at 12:00 noon to upload your Seminar exercises.
	Tutorial with Dr Buckley	Team Meeting	This tutorial is split in two 30 minutes sessions, one for Website Development and one for Networks. For Website Development, you should discuss the tasks assigned at the last meeting and assign new tasks. **Important:** You have until the 7th

			November 2018 at 12:00 noon to upload your Minutes of the Meeting.
	Homework	Homework Tasks	You will complete the seminars exercises (if you haven't done this during the seminars).
Week 6 05.11.18	Lecture with Dr Buckley	Review Week	Your group will be assigned 10-15 minutes for a discussion of your current progress for the coursework.
	Computer Networks Lecture with Dr Buckley	The Internet	The week we discuss the Origins of the Internet and look at TCP and IP. We discuss the key elements and operation of the Internet. We discuss connecting to a POP, a local loop (last mile), ISPs and NAPs.
	Seminar with Dr Buckley	Review Week	Your group will be assigned 10-15 minutes for a discussion of your current progress for the coursework.
	Seminar with Dr Buckley	Lab Exercises	You will work independently through the lab exercises. Important: You have until the 14th November 2018 at 12:00 noon to upload your Seminar exercises.
	Tutorial with Dr Buckley	Team Meeting	This tutorial is split in two 30 minutes sessions, one for Website Development and one for Networks. For Website Development, you should discuss the tasks assigned at the last meeting and assign new tasks. **Important**: You have until the 14th November 2018 at 12:00 noon to upload your Minutes of the Meeting.
	Homework	Catch-up	If you have fallen behind on any of the laboratory exercises or homework, then this is your opportunity to catch up.
Week 7 12.11.18	Lecture with Dr Buckley	JavaScript Introduction	This week we discuss about JavaScript and learn its syntax and how to write scripts using this language.
	Computer Networks Lecture with Dr Buckley	Network Topologies	This week we look at various topologies such as BUS, Tree, Ring and Star. We explain the advantages and disadvantages of each topology and highlight the SPFs. We conclude by explain how you should be referencing in your individual research.
	Seminar with Dr Buckley	Lab Exercises	You will work independently through the lab exercises.
	Seminar with Dr Buckley	Lab Exercises	You will work independently through the lab exercises.

			Important: You have until the 21st November 2018 at 12:00 noon to upload your Seminar exercises.
	Tutorial with Dr Buckley	Team Meeting	This tutorial is split in two 30 minutes sessions, one for Website Development and one for Networks. For Website Development, you should discuss the tasks assigned at the last meeting and assign new tasks. Important: You have until the 21st November 2018 at 12:00 noon to upload your Minutes of the Meeting. Important: Portfolio 1 for Website Development must be completed and submitted before: 8th December 2018 at 23:55.
	Homework	Homework Tasks	You will complete the seminars exercises (if you haven't done this during the seminars).
Week 8 19.11.18	Lecture with Dr Buckley	JavaScript II	This week we continue discussing about JavaScript and learn its syntax and how to write scripts using this language.
	Computer Networks Lecture with Dr Buckley	LAN Protocol Architecture	This week we discuss LAN protocol architecture by looking at the IEEE 802 reference model, the OSI Model and the TCP/IP model. We then discuss Logical Link Control, the services offered and the LLC PDU frame format. We conclude by discussing Medium Access Control in both a centralised and distributed network before concluding by examining the MAC frame format.
	Seminar with Dr Buckley	Lab Exercises	You will work independently through the lab exercises.
	Seminar with Dr Buckley	Lab Exercises	You will work on the specific tasks provided. Important: You have until the 28th November 2018 at 12:00 noon to upload your Seminar exercises.
	Tutorial with Dr Buckley	Team Meeting	This tutorial is split in two 30 minutes sessions, one for Website Development and one for Networks. For Website Development, you should discuss the tasks assigned at the last meeting and assign new tasks. Important: You have until the 28th November 2018 at 12:00 noon to upload your Minutes of the Meeting. Important: Portfolio 1 for Website

			Development must be completed and submitted before: 8th December 2018 at 23:55. Important: Portfolio 3 for Networks will be opened on Monday, 20th November 2018, 00:00AM and closed on Tuesday, 28th November 2018, 12:00 noon. You must be completed the tasks before the deadline to receive grades.
	Homework	Homework Tasks	You will complete the seminars exercises (if you haven't done this during the seminars). **Important:** Portfolio 1 for Website Development must be completed and submitted before: 8th December 2018 at 23:55.
Week 9 26.11.18	Lecture with Dr Buckley	PHP Introduction	This week we discuss about PHP and its variables.
	Computer Networks Lecture with Dr Buckley	Bridges and Routing	This week we discuss bridges and how they are used to connect two or more segments of a network. We discuss the operation and configuration. We also discuss routing and consider fixed routing and dynamic routing. We conclude by looking at the spanning tree algorithm.
	Seminar with Dr Buckley	Lab Exercises	You will work independently through the lab exercises.
	Seminar with Dr Buckley	Lab Exercises	You will work on the specific tasks provided. Important: You have until the 5th December 2018 at 12:00 noon to upload your Seminar exercises.
	Tutorial with Dr Buckley	Team Meeting	This tutorial is split in two 30 minutes sessions, one for Website Development and one for Networks. For Website Development, you should discuss the tasks assigned at the last meeting and assign new tasks. Important: You have until the 5th December 2018 at 12:00 noon to upload your Minutes of the Meeting. Important: Portfolio 1 for Website Development must be completed and submitted before: 8th December 2018 at 23:55.
	Homework	Homework Tasks	You will complete the seminars exercises (if you haven't done this during the seminars). **Important:** Portfolio 1 for Website Development must be completed

			and submitted before: 8th December 2018 at 23:55.
Week 10 03.12.18	Lecture with Dr Buckley	PHP II	This week we discuss about PHP and user input.
	Computer Networks Lecture with Dr Buckley	Hubs and Switches	This week we discuss hubs and switches and make comparisons between the two. We also extend our discussion from last week by detailing the differences between a bridge, a hub and a switch.
	Seminar with Dr Buckley	Lab Exercises	You will work independently through the lab exercises.
	Seminar with Dr Buckley	Lab Exercises	You will work on the specific tasks provided. Important: You have until the 12th December 2018 at 12:00 noon to upload your Seminar exercises.
	Tutorial with Dr Buckley	Team Meeting	This tutorial is split in two 30 minutes sessions, one for Website Development and one for Networks. For Website Development, you should discuss the tasks assigned at the last meeting and assign new tasks. Important: You have until the 12th December 2018 at 12:00 noon to upload your Minutes of the Meeting. Important: Portfolio 1 for Website Development must be completed and submitted before: 8th December 2018 at 23:55.
	Homework	Homework Tasks	You will complete the seminars exercises (if you haven't done this during the seminars). Important: Portfolio 1 for Website Development must be completed and submitted before: 8th December 2018 at 23:55.
Week 11 10.12.18	Lecture with Dr Buckley	Slippage	This week allows for slippage, if for example a topic took longer than the allocated week we can revisit that topic here. If no slippage is required this will be a recap week.
	Computer Networks Lecture with Dr Buckley	Addressing and Virtual LANs	This week we explain the different types of addressing, for example, Unicast, Broadcast and Multicast. We then discuss the need to separate LANs into virtual LANs and how this can be achieved by configuring the switching device, or by using MAC addresses and VLAN membership policies. We conclude by discussing how VLAN

			membership is communicated by looking at frame tagging and IEEE 802.1Q.
	Seminar with Dr Buckley	Slippage	This will allow you to catch up on any laboratory exercises not completed. If you have completed all your laboratory exercises you will continue to work on your coursework.
	Seminar with Dr Buckley	Lab Exercises	You will work on the specific tasks provided. **Important**: You have until the 19th December 2018 at 12:00 noon to upload your Seminar exercises.
	Tutorial with Dr Buckley	Team Meeting	This tutorial is split in two 30 minutes sessions, one for Website Development and one for Networks. For Website Development, you should discuss the tasks assigned at the last meeting and assign new tasks. You should be clear what tasks your group members will complete during the three week break. **Important**: You have until the 17th December 2018 at 23:55 to upload your Minutes of the Meeting. **Important**: Portfolio 4 for Networks will be opened on Monday, 11th December 2018, 00:00AM and closed on Tuesday, 19th December 2018, 12:00 noon. You must be completed the tasks before the deadline to receive grades.
	Homework		No homework this week. Have a lovely Christmas!
B R E A K F O R C H R I S T M A S			
R E T U R N A F T E R C H R I S T M A S B R E A K			
Week 12 14.01.19	Lecture with Dr Buckley	PHP, MySQL and Apache	This week we discuss about the Apache server, how to work with it and how to link PHP with MySQL.
	Computer Networks Lecture with Dr Buckley	Traditional Ethernet	This week we discuss the history of Ethernet. We look at MAC techniques such as ALOHA, Slotted Aloha, CSMA and CSMA/CD. We also discuss the media contention issues and examine Nonpersistent, 1-Persistent and P-Persistent. We also discuss Binary Exponential Backoff algorithm. We then discuss how to detect a collision at the transmitter or the central hub. We conclude by looking at the MAC frame format and the alternative configurations of Ethernet.
	Seminar with Dr Buckley	Lab Exercises	You will work independently through the lab exercises.
	Seminar with Dr Buckley	Lab Exercises	You will work on the specific tasks provided. **Important**: You have until the

			23rd January 2018 at 12:00 noon to upload your Seminar exercises.
	Tutorial with Dr Buckley	Team Meeting	This tutorial is split in two 30 minutes sessions, one for Website Development and one for Networks. For Website Development, you should discuss the tasks assigned at the last meeting and assign new tasks. **Important:** You have until the 23rd January 2018 at 12:00 noon upload your Minutes of the Meeting.
	Homework	Homework Tasks	You will complete the seminars exercises (if you haven't done this during the seminars).
Week 13 21.01.19	Lecture with Dr Buckley	Registering and Authentication	This week we look at applying what we learnt last week by creating a page that will allow a user the ability to register for Ace Training. We also discuss and implement an authentication scheme to allow a user to log onto the website. In order to do well in the assessment we should restrict access to pages based on the user logged in, therefore we discuss how we can prevent a user that is not logged in accessing restricted pages.
	Computer Networks Lecture with Dr Buckley	High Speed Ethernet	This week we continue our discussion on Ethernet by considering high-speed Ethernet. Specifically we discuss 100BASE-T, 100BASE-X, MLT-3 Signalling, 100BASE-T4. We also look at full duplex implementations and mixed Ethernet configurations. In addition we discuss Gigabit Ethernet, 10-Gbit/s Ethernet and 100-Gbit/s Ethernet. We conclude by explaining Multilane Distribution and Inverse Multiplexing.
	Seminar with Dr Buckley	Lab Exercises	You will work independently through the lab exercises.
	Seminar with Dr Buckley	Lab Exercises	You will work on the specific tasks provided. **Important**: You have until the 30th January 2018 at 12:00 noon to upload your Seminar exercises.
	Tutorial with Dr Buckley	Team Meeting	This tutorial is split in two 30 minutes sessions, one for Website Development and one for Networks. For Website Development, you should discuss the tasks assigned at the last meeting and assign new tasks. **Important:** You have until the 30th January 2018 at 12:00 noon to upload your Minutes of the Meeting. **Important:** Portfolio 5 for Networks will be opened on Monday, 22nd January 2018, 00:00AM and closed on Tuesday, 30th January 2018 at 12:00

			noon. You must be completed the tasks before the deadline to receive grades.
	Homework	Homework Tasks	You will complete the seminars exercises (if you haven't done this during the seminars).
Week 14 28.01.19	Lecture with Dr Buckley	Functional Scripting	This week we discuss how to implement functions within a PHP script.
	Computer Networks Lecture with Dr Buckley	Wireless LANs Overview, IEEE 802.11 Architecture and Services	This week we discuss Wireless LANs. We begin with a quick background and some terminology. We then discuss single-cell WLANs, Multiple-cell WLANs and Ad hoc networking. We discuss the requirement of a LAN before discussing the IEEE 802.11 Architecture and services. We conclude by discussing the Wi-Fi alliance and association services.
	Seminar with Dr Buckley	Lab Exercises	You will work independently through the lab exercises.
	Seminar with Dr Buckley	Lab Exercises	You will work on the specific tasks provided. **Important**: You have until the 6th February 2018 at 12:00 noon to upload your Seminar exercises.
	Tutorial with Dr Buckley	Team Meeting	This tutorial is split in two 30 minutes sessions, one for Website Development and one for Networks. For Website Development, you should discuss the tasks assigned at the last meeting and assign new tasks. **Important:** You have until the 6th February 2018 at 12:00 noon to upload your Minutes of the Meeting. **Important:** Website Development Portfolio 2 must be completed and submitted before: 23nd February 2018 at 23:55.
	Homework	Homework Tasks	You will complete the seminars exercises (if you haven't done this during the seminars).
Week 15 04.02.19	Lecture with Dr Buckley	Tutor/Student Options I	This week we look at allowing a tutor the ability to create new courses, whilst ensuring the student does not. Once a course has been created we should allow students the ability to register onto the course (but not yet access materials for that course). Once a tutor has authorised a student(s) onto their course the student(s) should then be able to access the resources for that course.
	Computer Networks Lecture with Dr Buckley	IEEE 802.11 Medium Access Control	The week we focus on the IEEE 802.11 MAC layer. We discuss the protocol architecture by explain the distributed coordination function and the three

			interframe spaces (SIF, PIF and DIF). We then discuss the point coordination function and explain superframe intervals. To conclude we explain CSMA access, LLC PDU frames and the MAC frame format.
	Seminar with Dr Buckley	Lab Exercises	You will work independently through the lab exercises.
	Seminar with Dr Buckley	Lab Exercises	You will work on the specific tasks provided. **Important**: You have until the 12th February 2018 at 12:00 noon to upload your Seminar exercises.
	Tutorial with Dr Buckley	Team Meeting	This tutorial is split in two 30 minutes sessions, one for Website Development and one for Networks. For Website Development, you should discuss the tasks assigned at the last meeting and assign new tasks. **Important:** You have until the 12th February 2018 at 12:00 noon to upload your Minutes of the Meeting. **Important:** Website Development Portfolio 2 must be completed and submitted before: 23nd February 2018 at 23:55.
	Lecture with Dr Buckley	Tutor/Student Options I	This week we look at allowing a tutor the ability to create new courses, whilst ensuring the student does not. Once a course has been created we should allow students the ability to register onto the course (but not yet access materials for that course). Once a tutor has authorised a student(s) onto their course the student(s) should then be able to access the resources for that course.
Week 16 11.02.19	Lecture with Dr Buckley	Tutor/Student Options II	This week we look at allowing a tutor the ability to create new courses, whilst ensuring the student does not. Once a course has been created we should allow students the ability to register onto the course (but not yet access materials for that course). Once a tutor has authorised a student(s) onto their course the student(s) should then be able to access the resources for that course.
	Computer Networks Lecture with Dr Buckley	IEEE 802.11n	This week we discuss the IEEE 802.11n standard. We explain the Antenna Architecture (MIMO), channel bonding and the different options for frame aggregation.
	Seminar with Dr Buckley	Lab Exercises	You will work independently through the lab exercises.
	Seminar with Dr Buckley	Lab Exercises	You will work on the specific tasks provided. **Important**: You have until

			the 20th February 2018 at 12:00 noon to upload your Seminar exercises.
	Tutorial with Dr Buckley	Team Meeting	This tutorial is split in two 30 minutes sessions, one for Website Development and one for Networks. For Website Development, you should discuss the tasks assigned at the last meeting and assign new tasks. **Important:** You have until the 20th February 2018 at 12:00 noon to upload your Minutes of the Meeting. **Important:** Website Development Portfolio 2 must be completed and submitted before: 23nd February 2018 at 23:55. **Important:** Portfolio 6 for Networks will be opened on Monday, 12th February 2018, 00:00AM and closed on Tuesday, 19th February 2018 at 12:00 noon. You must be completed the tasks before the deadline to receive grades.
	Homework	Homework Tasks	You will complete the seminars exercises (if you haven't done this during the seminars).
Week 17 18.02.19	Lecture with Dr Buckley	Using Resources	This week we look at allowing a tutor the ability to upload a resource (i.e. a PowerPoint presentation). Once the resource is uploaded the tutor should be able to use that resource for the required course.
	Computer Networks Lecture with Dr Buckley	IEEE 802.11ac and IEEE.11ad (Gigabit Wi-Fi)	This week we give an overview of the IEEE 802.11ac and IEEE 802.11ad standards. We then discuss how we can correct from errors (FEC) and explain the Low-Density Parity-Check algorithm.
	Seminar with Dr Buckley	Lab Exercises	You will work independently through the lab exercises. **Important**: You have until the 27th February 2018 at 12:00 noon to upload your Seminar exercises.
	Seminar with Dr Buckley	Lab Exercises	You will work on the specific tasks provided.
	Tutorial with Dr Buckley	Team Meeting	This tutorial is split in two 30 minutes sessions, one for Website Development and one for Networks. For Website Development, you should discuss the tasks assigned at the last meeting and assign new tasks. **Important:** You have until the 27th February 2018 at 12:00 noon to upload your Minutes of the Meeting. **Important:** Website Development

			Portfolio 2 must be completed and submitted before: 23nd February 2018 at 23:55.
	Homework	Homework Tasks	You will complete the seminars exercises (if you haven't done this during the seminars).
Week 18 25.02.19	Lecture with Dr Buckley	PHP Uploading Resources	This week we look at allowing a tutor the ability to upload a resource (i.e. a powerpoint presentation). Once the resource is uploaded the tutor should be able to use that resource for the required course.
	Computer Networks Lecture with Dr Buckley	Principles of Internetworking and the Internet Protocol	This week we give an overview of packet-switching networks and explain some internetworking terminology. After discussing the requirements of internetworking we examine the differences between different networks. Focus is then applied to the Internet Protocol and we explain connectionless operation, routing, fragmentation and reassembly, the datagram life time. We conclude by discussing error and flow control.
	Seminar with Dr Buckley	Lab Exercises	You will work independently through the lab exercises.
	Seminar with Dr Buckley	Lab Exercises	You will work on the specific tasks provided. **Important**: You have until the 6th March 2018 at 12:00 noon to upload your Seminar exercises.
	Tutorial with Dr Buckley	Team Meeting	This tutorial is split in two 30 minutes sessions, one for Website Development and one for Networks. For Website Development, you should discuss the tasks assigned at the last meeting and assign new tasks. **Important:** You have until the 6th March 2018 at 12:00 noon to upload your Minutes of the Meeting.
	Homework	Homework Tasks	You will complete the seminars exercises (if you haven't done this during the seminars).
Week 19 04.03.19	Lecture with Dr Buckley	PHP Managing Different Users	This week we discuss how to manage different users in AceTraining using PHP.
	Computer Networks Lecture with Dr Buckley	The Internet Protocol. IPv4 and IPv6	We continue our discussion with Internetworking but this week we pay attention to the IPv4 and IPv6 protocols. When discussing IPv4 we look at the services afforded, the IP datagram, network classes, the address format (network, host, subnet). Then we discus ICMP and examine the header and the information fields, we give an example using Echo and Echo Reply. Then we

			discuss ARP and the need to resolve unknown MAC addresses. When discussing IPv6 we detail the need for IPv6, the enhancements over IPv4, the structure and the header. The address formats. We then focus on extension headers, the flow label and fragmentation. To conclude we discuss the need for IP security (IPSEC), the applications and give an example scenario for IPSec.
	Seminar with Dr Buckley	Lab Exercises	You will work independently through the lab exercises.
	Seminar with Dr Buckley	Lab Exercises	You will work on the specific tasks provided. **Important**: You have until the 13th March 2018 at 12:00 noon to upload your Seminar exercises.
	Tutorial with Dr Buckley	Team Meeting	This tutorial is split in two 30 minutes sessions, one for Website Development and one for Networks. For Website Development, you should discuss the tasks assigned at the last meeting and assign new tasks. **Important:** You have until the 13th March 2018 at 12:00 noon to upload your Minutes of the Meeting. **Important:** Portfolio 7 for Networks will be opened on Monday, 5th March 2018, 00:00AM and closed on Tuesday, 12th March 2018 at 12:00 noon. You must be completed the tasks before the deadline to receive grades.
	Homework	Homework Tasks	You will complete the seminars exercises (if you haven't done this during the seminars).
Week 20 11.03.19 **Coursework DUE**	Lecture with Dr Buckley	XHTML Revision	This week we revise XHTML.
	Computer Networks Lecture with Dr Buckley	Transport Protocols. TCP and UDP	This week we describe the requirements of a transport service. Then we look at connection-oriented transport protocol mechanisms and discuss Connection Establishment, Data Transfer, Connection Termination, dealing with duplicate segments, segments that arrive out of order, addressing, multiplexing, flow control and recovery failure. We discuss TCP and UDP in depth.
	Seminar with Dr Buckley	Lab Exercises	You will work independently through the lab exercises.
	Seminar with Dr Buckley	Lab Exercises	You will work on the specific tasks provided. **Important**: You have until the 20th March 2018 at 12:00 noon to upload your Seminar exercises.
	Tutorial with Dr Buckley	Team Meeting	This tutorial is split in two 30 minutes sessions, one for Website

			Development and one for Networks. For Website Development, you should discuss the tasks assigned at the last meeting and assign new tasks. **Important:** You have until the 20th March 2018 at 12:00 noon to upload your Minutes of the Meeting
	Homework	Homework Tasks	You will complete the seminars exercises (if you haven't done this during the seminars).
Week 21 18.03.19 **Oral Presentations DUE**	Lecture with Dr Buckley		Your group will be assigned 10-15 minutes to allow you to give a presentation and a demonstration of your application.
	Lecture with Dr Buckley		Your group will be assigned 10-15 minutes to allow you to give a presentation and a demonstration of your application.
	Seminar with Dr Buckley		Your group will be assigned 10-15 minutes to allow you to give a presentation and a demonstration of your application.
	Seminar with Dr Buckley		Your group will be assigned 10-15 minutes to allow you to give a presentation and a demonstration of your application.
	Tutorial with Dr Buckley /Dr Buckley		Your group will be assigned 10-15 minutes to allow you to give a presentation and a demonstration of your application.
	Homework		No homework this week.
Week 22 25.03.19	Lecture with Dr Buckley		This is your feedback week. You will be assigned 10-15 minutes to allow you to discuss your feedback and your grade with the tutor.
	Computer Networks feedback session with Dr Buckley		This is your feedback week. You will be assigned 10-15 minutes to allow you to discuss your feedback and your grade with the tutor.
	Seminar with Dr Buckley		This is your feedback week. You will be assigned 10-15 minutes to allow you to discuss your feedback and your grade with the tutor.
	Seminar with Dr Buckley		This is your feedback week. You will be assigned 10-15 minutes to allow you to discuss your feedback and your grade with the tutor.
	Tutorial with Dr Buckley /Dr Buckley		This is your feedback week. You will be assigned 10-15 minutes to allow you to discuss your feedback and your grade with the tutor.
	Homework		No homework this week.
Week 23 01.04.19	Lecture with Dr Buckley		This week we will focus on Examination Revision. During this lecture, we will discuss the structure of the examination and work though

			some example examination style questions.
	Computer Networks Lecture with Dr Buckley		We will focus on Examination Revision.
	Seminar with Dr Buckley		You will work independently through the examination revision exercises.
	Seminar with Dr Buckley		You will work on the specific tasks provided.
	Tutorial with Dr Buckley /Dr Buckley		Support Session
	Homework		No homework this week.
B R E A K F O R E A S T E R			
Week 24 29.04.19	Lecture with Dr Buckley		Examination Revision / Support Session
	Computer Networks Lecture with Dr Buckley		Examination Revision / Support Session
	Seminar with Dr Buckley		Examination Revision / Support Session
	Seminar with Dr Buckley		Examination Revision / Support Session
	Tutorial with Dr Buckley /Dr Buckley		Examination Revision / Support Session
	Homework		No homework this week.
Week 25 06.05.19	Lecture with Dr Buckley		Examination Revision / Support Session
	Computer Networks Lecture with Dr Buckley		Examination Revision / Support Session
	Seminar with Dr Buckley		Examination Revision / Support Session
	Seminar with Dr Buckley		Examination Revision / Support Session
	Tutorial with Dr Buckley /Dr Buckley		Examination Revision / Support Session
	Homework		No homework this week.

The dates in the schedule are week beginning dates, thus each date is a Monday, and your classes may be any day that week and you should consult your individual timetable which is published on the student portal.

Assessments

Unless you are told otherwise by your Tutor, you should submit your coursework electronically through the **Turnitin** facility on the Moodle for this 60 Credit unit. Student guidance for using Turnitin can be found at: www.hope.ac.uk/gateway/staff/learningandteaching/learningteachingresources/turnitin/.

Title of Assessment	% of 60 credit unit	Submission date	Location/ method of submission	Latest date you should expect to receive feedback
Computer Systems	**50%**			All feedback will be given within 4 weeks of submission.
• Networks Project	25%	22/03/2019	Moodle	
• Website Development Project	25%	22/03/2019	Moodle	
Portfolio in Computer Systems	**25%**			
• Network Portfolios	12.5%	During Tutorials	Moodle	
• Website Portfolios	12.5%	During Tutorials	Moodle	
Examination in Computer Science (Additional)	**25%**	See your SRM for the examination timetable.	TBC	

Details of Assessments

Networks Project

Problem Statement

Ace Training Ltd is a small company, which delivers technical computer-training courses at its training centre in Manchester, and on customer premises throughout the UK. It employs a Sales manager, ten sales staff, two marketing people, and two accounts staff in its head office in Liverpool. The Managing Director (MD), his secretary and switchboard/receptionist are also located there.

At the training centre there are the following staff: a manager, two administrators, one technician and ten instructors.

The sales staff make the vast majority of sales over the telephone. There is very little use of information technology in the head office. The marketing department has one Macintosh computer, the accounts department uses one PC running *Sage* accounting software and the Sales department has one PC for preparing quotes. The MD's secretary also has a computer.

The Managing Director views the current system as inefficient. He has called in your team, as consultants, to advise him. He believes a network for the head office will improve sales performance significantly. Your terms of reference are:

- **To design and present proposal for purchase, implementation and support of a new network for Sales tracking, marketing and accounts.**

This is a sizeable task, despite the small scale of the company. Clearly such factors as cost of the solution, training and support are required for a comprehensive solution.

There is insufficient information given above to specify the solution precisely. The first stage is therefore to perform requirements analysis to make sure you are absolutely clear about what the company needs. Additional information can be sought from the course tutor either in class or via email. The additional information should not be technical information, i.e. you should not ask question like what type of cabling should be used. This is your job to research the different types and present a solution. However, questions about the organisation are welcomed, i.e. would you like an email system? Do you expect the company to grow and if so what is the projected growth?

Additional information is also on the Moodle page.

Deliverables:

- You will research and develop a solution to meet the requirements of Ace Training and you will submit that proposal. The proposal should contain at least the sections in appendix 1 – "Minimum required format for your proposal" which is on Moodle and included in this document.
- You will present this proposal to the board of Ace Training Ltd (15 minute PowerPoint presentation).
- Individuals should submit what they consider their best **research handout** of their research in this PBL case. NB These will inform the solution of your summatively assessed coursework.

Assessment Criteria / Weightings

Assessment criteria is available on the Moodle page.

Further Information

Ace Training Ltd Business issues

1. The company has grown rapidly and a number of problems have arisen that cause serious inefficiencies in the sales processes. For example: All customer sales records are all kept on paper. Each sales rep keeps a diary and card index of the customers that they are responsible for. This means that the information on a particular customer is difficult to find – especially if their sales rep is not in the office. This inefficiency has led to a number of lost sales opportunities. Since the sales people are largely paid on commission, this has caused low moral (and limited profits). The *ACT*! Contact management software from Sage (www.sage.co.uk) has been selected as the preferred product.

2. A consequence of the new way of working is that the system should exhibit high availability; with a maximum downtime of 2 hrs.

3. The Training Centre manager often exchanges faxes with the Sales manager.

Scope

The Manchester training centre does not require networking, but the training centre manager will need access to emails (via the Internet).

Liverpool building

The Liverpool site is a single-storey building (internal dimensions 20m x 16m) with solid floor, suspended ceiling and stud-partition walls. A layout plan can be found on the course website. The building was recently rewired and has more than adequate power supply with plenty of sockets located throughout the building. The company do not want any walls removing, though further partitions could be added if essential. The telephone system is not to be changed.

Advice.

1. You should keep records of all meetings. (minutes and lists of actions). You are required to submit the minutes of the meeting each week as they form part of your coursework (engagement).

Solving the Problem: The PBL Process

Initial Formalities

1. Choose a chairperson for this PBL case. The task of the person is to ensure that a plan is produced & co-ordinate the requirement spec production.
2. Choose a scribe for this case. The task of the scribe is to take notes, detailing the main points and actions.
3. Decide on a team name.

Understanding the Problem (steps 1-4)

Find the appendix of the Module Guide, which gives details of the PBL stages. This section is about steps 1-4.

- **Step 1:** Read the problem statement. Are there any parts of the problem statement that are unclear or incomplete? Make a list of issues that need clarifying. Are there any terms used that you don't understand? *If so, list them*. You will need to obtain clarification from your tutor during the interview.
- **Step 2: Define the problem –** Make sure you are clear about what you have to do.
- **Step 3: What do you know about this already**? In your team, hold a brainstorming session to identify the requirements that you can find from the information provided.

  a) **Analyse the Requirements and make a list**. The requirements can be broken into a number of headings, e.g.: **Functional requirements** (what the system must do), non-functional (e.g. Support, training, constraints on hardware, software or location). The scribe should make a list of all that have been suggested.
- **Step 4 Make a systematic list.** Examine the suggestions your team has produced. Organise the connections between them, group ideas into categories, value and sort out what is irrelevant.

  Make two lists:

  1. The list of preliminary requirements from step 3.
  2. A list of things you need to investigate / find out / get answers to. These are called learning issues. E.g. what information do you need to know from Ace Training?

End of Class Check

Check the lists with your Tutor before you leave.

Resources

There are a number of resources available to you:

1. For information about networking technology and terminology, see the course text and resources available on the course Web site.
2. For information about Ace Training consult the module web site or ask your tutor.
3. Template for requirement spec – see course web site.

Appendix 1

Minimum required format for your proposal

The report must be bound (e.g. Spiral or heat binding) and should consist of:
Title Page
Contents list

1. Executive Summary

   This section summarises the requirement, the proposed solution, the business benefits of the solution and the price. Ideally, it should fit on 1 page. (max 2 pages), structured into 3 sub-sections:

   1.1. Requirements
   1.2. Response (outline solution & total price)
   1.3. Benefits
2. Background
   2.1. Business background (to the company and their requirement)
   2.2. Problems (that are being experienced by the company)
3. Requirements
   3.1. Functional Requirements
   3.2. Non-functional requirements
4. Recommended Solution
   4.1. Network Technology
   4.2. Hardware proposed
   4.3. Operating Systems Proposed
      4.3.1.Servers
      4.3.2.Clients
   4.4. Software proposed
   4.5. Security Considerations
   4.6. User training proposed
   4.7. Support staff
   4.8. System maintenance
   4.9. Benefits of your solution (link problem /requirements / solution, you may briefly consider alternatives at this point))
   4.10. Total costs
5. Installation schedule
6. Training plan

Appendix

Any detailed breakdowns or specifications of s/w h/w etc. (in a form that makes them easy to find). NOT copied and pasted price lists or hardware specs from the Internet

Any alternatives (details) Spreadsheet of costs, identifying: item, source, unit cost, quantity, total cost

Assessment Criteria / Weightings for Networks Coursework

	Fail	Pass (40-49%)	Good Pass (50-69%)	Excellent (70-100%)	Evidence Judged	
Requirements	Requirements not listed or incomplete. Major requirements not captured.	Requirements listed and expanded upon. Most requirements captured.	As pass, plus all requirements captured and the list of requirements are prioritised accordingly.	As GP, plus the list of requirements have been categorised into functional and non-functional correctly.	Team Report	7%
Solution	Sections of the solution are missing or incomplete	Minimum required sections of the solution are present. The information in these sections is mostly relevant.	As pass, plus for each and every section there is the appropriate level of detail with no obvious omissions. Most of the recommendations have justification.	As GP plus, there is a high level of detail for all sections. All recommendations have been fully explored and decisions justified. The justification is backed by credible sources.	Team Report	10%
Security and Contingency	No discussion of security or contingency.	Security discussed from a physical point of view. Contingency discussed for SPF components.	As pass, plus security discussed for data. Contingency solutions presented with justification.	As GP plus a comprehensive security and contingency solution provided with justification.	Team Report	8%
Team Work	No evidence of meetings No evidence of team contract	Minutes and team contract submitted in appendix.	Minutes of a good standard and structured according to advice given. Team Contract is comprehensive with a good set of rules.	As GP plus Minutes are of a professional standard and meetings were held regularly. Team contract has been expanded to incorporate more rules that are relevant	Team Report	10%
Formatting of Report	Poorly structured, contains several spelling errors or is grammatical incorrect throughout.	Reports are structured with headings and TOC. Acceptable spelling and grammar.	As Pass and structured according to advice provided. Written in clear appropriate style of English. No technical or formatting errors.	As GP and presented in a professional manner.	Team Report	5%
Research	No evidence of additional reading to support the given task.	Evidence of some reading/research to support the tasks. Some appropriate references are provided, mostly in Harvard Standard.	At least 15 references used correctly and references are in Harvard standard. There may be occasional minor deviations.	A wide range of research. Appropriate references, all fully Harvard compliant.	Team Report	5%

Appendix	Individual component costs not supplied in the appendix	Component costs supplied in appendix and well formatted.	As pass plus good use of formatting techniques to present component costs	As Good Pass plus categories of costs supplied (i.e. PCs, Training)	Team Report	5%
Question	Research Question not set or question not appropriate.	Research Question set, which is appropriate.	As pass, plus the research question is clear.	As GP, plus the research question is narrow or concise.	Individual Research	3%
Key Points	No key points listed.	Key points listed.	As pass, plus no major omissions.	As GP plus no omissions	Individual Research	3%
Details of Research	Sections of the research are missing or incomplete	The research is mostly relevant with obvious omissions.	As pass, plus a good level of required detail. No obvious omissions.	As GP plus, there is a high level of detail for all sections. .	Individual Research	7%
Recommendations	No recommendation made in relation to PBL case.	Some recommendations made. These recommendations may be wrong. Attempt at justification for the recommendations.	Most recommendations have been explored and these recommendations are justified. The recommendations are sound.	All recommendations have been fully explored and decisions justified. The justification is backed by credible sources	Individual Research	7%
References	No evidence of additional reading to support the given task.	Evidence of some reading/research to support the tasks. Some appropriate references are provided, mostly in Harvard Standard.	At least 5 references used correctly and references are in Harvard standard. There may be occasional minor deviations.	A wide range of research. Appropriate references, all fully Harvard compliant.	Individual Research	3%
Formatting of Report	Poorly structured, contains several spelling errors or is grammatical incorrect throughout.	Research handout is structured with appropriate headings. Acceptable spelling and grammar.	As Pass and structured according to advice provided. Written in clear appropriate style of English. No technical or formatting errors.	As GP and presented in a professional manner.	Individual Research	2%
Presentation Slides	Not within 5 minutes of agreed time	Logical Structure, Presentation is consistent	Appropriate text and graphics. Presentation discusses key points with introductions, summary, price & signposting	Presentation is persuasive and clearly links features/ benefits of solution with client needs and problems	Presentation	12.5%
Individual Presentation Skills	No participation or not clearly spoken	Clear Speech, Some Eye Contact, does not read from script	Varies Pace and Pitch, Co-ordinates with other team members, relates to clients in presentation	Answers questions knowledgeably, confident, enthusiastic and persuasive	Presentation	12.5%

Website Development

Summative Assessment: Training Website

Assessment Brief

Satisfactory

Ace training requires a new system for students that enrol onto their course(s). There will typically be three methods of enrolment: from a list, by a tutor, or by a student. Students that register themselves require authorising by the tutor.

Tutors are created by administrator(s) after the credentials of the tutor has been checked. To become a course, tutor the individual will register as a tutor.

Good

The tutor will have the facility of uploading various resources, such as PowerPoint presentations and documents. Once uploaded they should either: be made available to the student, not available or available within a specified date range.

There should be a mechanism in place for online assessment in the form of quizzes. A variety of questions should be accounted for, e.g. multiple choice, true or false, fill in the blank. Example questions are provided for you. The tutor should be able to create a quiz in a text format, upload the quiz so that the text file is automatically processed to become the online quiz.

Excellent

A record should be kept of the quizzes that each student has completed with their scores. The student should be able to see their scores; this could be in a graph format which may also show their progress. The tutor would also need to see this data for all students in the appropriate format (students should not see other students' scores).

Outstanding

It is desired that as a student progresses through the course a course progress bar shows their progress, it is also desirable for an average knowledge bar which assesses their average knowledge of the subject. Other features that you think relevant should also be included, for example, an online course register.

Guidelines – Where to start

We have introduced more formal reporting in this case, to more accurately reflect aspects of professional practice, and to monitor contributions for assessment purposes. We recommend you start as follows:

As a PBL case you may wish to break this down into the following suggested tasks:

1. Create a timescale of work
2. Prototype initial designs on paper in the form of storyboards and navigational diagrams
3. Allocate parts of the site to each member to design
4. Decide what skills will need to be gained or improved upon to complete the website project. These should be logged in an individual diary
5. Implement your agreed design – the website should be no less than **10 pages** long.

   Note: Usability principles should be adhered to in your design, referenced and reflected upon in your project documentation.

6. Testing and further refinement

Using the documentation provided on the website you should adhere to the following steps:

1. **Decide who will take what role in the team**. Fill in the roles and contact details form (appendix A)
2. **Read and sign the team contract (separate document).** Briefly review team performance from PBLF1, AGREE that this is a fresh start and DO NOT bring up issues from the past.
3. **Brainstorm activities needed for project,**
4. For each identify task, date needed to be complete, dependencies on other tasks, resources needed and any learning issues.
5. **Complete the project planning form** – put the tasks in sequence and identify who will complete them. It is advisable to have more than one person on some critical tasks. You will need to modify the form for the tasks that you have identified. MAKE SURE YOU ALLOW FOR SLIPPAGE!
6. **Check this with your tutor when complete**.
7. **Complete the meeting record and summary of attendance** for meeting 1. Summarise actions, agree next meeting.

Deliverables:

You should produce the following at the end of this case. Written materials should be submitted by 3pm on the cut-off date. See course web site for cut-off date. All students are expected to complete 1-3, those that worked in a team should also complete 4.

1 **A Web site for the brief.** You should publish your site

2 **A sales presentation (15 minutes):** Demonstrating your web site and explaining how it meets the design brief and why it should be adopted. You will deliver this in a seminar to the class at the time identified on the course web site. Please be aware that the website will be marked in this presentation and you will be

expected to demonstrate effectively the ease of use, navigation and feature of the website in relation to the client's needs.

3 **Individual report**: A report that describes the process of creating your website.

3.1 The report must include the following sections:

a) Web design principles: A discussion of the web design principles and concepts that you have followed, including legal, professional, ethical and usability issues. Explain how the site should be promoted. Justify your decisions.

Minimum Structure for Report

Coversheet

Table of Contents

1. Introduction
2. Website Design Principles
   a. Legality Issues
      i. Copyright
      ii. Data Protection
      iii. Disability and the Equality Act 2010
      iv. Privacy Policy
   b. Professional Issues
   c. Usability Issues
   d. Design and Implementation
   e. Promoting the Website
      i. Meta tags
      ii. Search Engine Optimisation
3. Planning, Research and Contribution
   a. Planning the project
   b. Difficulties Encountered
   c. Resolution of difficulties
4. Appendix
   a. Technical Documentation
      i. User Requirements
      ii. Site Map
      iii. Storyboards
      iv. Templates
      v. CSS printout(s) with comments

2b, 2c and 2d will link to 2a, for example, when discussing professional issues you may explain about the language used throughout the site, you may also refer back to the privacy policy previously discussed.

When discussing usability issues, this will most certainly link back to the Disability and the Equality Act 2010 at points.

Evaluation of your contribution: Identify (with examples) the work you have done, in particular, identify your self-directed learning, resources used and an analysis of how effectively you performed.

4 **Team Project documentation, comprising**:

4.1 Submission declaration, signed by all team members (see Appendix A)

4.2 Process documentation (See Appendix A for templates)

a) Meeting attendance record sheet summary
b) Meeting Record sheets
c) Project Plan
d) Roles/Responsibilities and contact details sheet
e) Completed team contract

Website Development marking criteria **Student(s)**_____

Summative Assessment

	Fail	Pass (40-49%)	Good Pass (50-69%)	Excellent (70-100%)	Evidence	
Usability, legal and professional	Lack of detail or little understanding demonstrated of	Appropriate understanding of usability, legal and professional issues	As pass plus justification that relates to clients website	As good pass plus high level of detail, multiple options explored and all decisions justified.	Report	15%
Planning and Research	No evidence of planning or additional reading to support the given task	Report provides evidence of some appropriate planning.	Evidence of systematic planning and monitoring. Evidence of some reading/ research to support the tasks	As Grade B and high level of consistency and thoroughness. Evidence of a wide range of research.	Report	15%
Presentation	Content is not relevant in most parts, poorly structured, contains several spelling errors or is grammatical incorrect throughout.	Reports are structured with headings. Acceptable spelling and grammar. Mostly relevant content.	As Pass and structured according to advice provided. Written in clear appropriate style of English.	As Grade B and demonstrates appropriate level of detail	Report	5%
Oral Presentation	Non attendance, No participation	Clear Speech, Some Eye Contact, relates to client in presentation	As pass plus Varies pace and pitch, Co-ordinates with other team members	As good pass plus, answers questions knowledgably, confident, enthusiastic and persuasive	Presentation	10%
Slides	Non attendance, No participation, Slides not working or fails to open	Logical Structure (intro, body, conclusion)	Presentation is consistent and relates to the report, key points discussed	As good pass plus presentation within 5 minutes of agreed time and clear benefits of solution provided	Presentation	5%
Demonstration	No database connectivity	Good selection of overall content and topics for each page, directory structure allows for easy maintenance and expansion. Website demonstrates consistent, appropriate use of techniques using templates, CSS and JavaScript.	As pass plus, good functionality of xhtml links. Good functionality of SQL database. Validation of Data entry appropriate. Restricted access to tutor pages	As good pass plus, outstanding features present. Tutor able to upload quizzes that automatically grade the student. Record of student activity and progress recorded.	Website	50%

Essential Assessment-related Dates for Level I 2018-19

Friday 15 March 2019	Submission of final coursework assessments for all courses
Monday 20 May to Friday 31 May 2019	Examinations
Wednesday 26 June 2019	End of Year Results Published
Monday 19 August to Friday 23 August 2019	Resit examinations.

Requesting an Extension

Extensions will not be granted unless there are mitigating circumstances that prevent you from completing the work before the deadline. Should you have circumstances that warrant an extension you should complete the extension request form which is available here:

http://www.hope.ac.uk/gateway/supportandwellbeing/studentadministration/understandingyourdegree/

Assignments which are submitted late, without an extension, will normally receive a mark of ZERO.

Feedback

Liverpool Hope University has a policy of returning feedback to all students within 4 working weeks (i.e. excluding holiday weeks) of submission of any assessment.

Referencing:

Information on 'Referencing Your Work' is available via the Library webpages, simply select 'Student How to Guides' and look for 'Referencing Your Work' at www.hope.ac.uk/gateway/library/interactiveguides/referencing/

You should remember that individual subjects can use differing referencing styles. This is particularly important if you are registered on a combined honours or BA(QTS) award and you should be careful to check with each of your subjects separately.

Course Reading Materials:

Data and Computer Communications (Tenth Edition)
Author: William Stallings.
Pearson Education International.
ISBN-10: 1292014385
ISBN-13: 978-1292014388

Mastering the internet, xhtml, and javascript. Author: Ibrahim Zeid
Author: Ibrahim Zeid
Edition: (2006)
Publisher: Pearson
ISBN: 978-0536153210

JavaScript for the World Wide Web: Student Edition
Author: Tom Negrino
Edition: 5th ed. (2003)
Publisher: Peachpit Press
ISBN: 978-0321150714

Sam's Teach Yourself PHP, MySQL and Apache.
Author: Julie C. Meloni
Edition: 5th ed. (2012)
Publisher: Sams
ISBN: 978-0672335433

Your full reading list for the course can be found through Moodle. Your tutor may give you additional reading each week.

Other Reading

You are expected to read key academic texts for your course. The more credible the research texts the better you will score on citation and referencing. Your University subscribes to the IEEE Xplore digital library, which is a powerful resource for discovery of and access to scientific and technical content published by the IEEE (Institute of Electrical and Electronics Engineers) and its publishing partners. IEEE Xplore provides web access to more than three-million full-text documents from some of the world's most highly cited publications in electrical engineering, computer science and electronics. More than two-million documents are in robust, dynamic HTML format. The content in IEEE Xplore comprises:

- 170+ journals
- 1,400+ conference proceedings
- 5,100+ technical standards
- Approximately 2,000 eBooks
- 400+ educational courses
- Approximately 20,000 new documents are added to IEEE Xplore each month.

Library Support:

Your reading list can be accessed online via Moodle. This allows you a quick and easy link to the Library Catalogue where you can instantly see if an item is available. If the item is an online resource or web page you will be able to link directly to the item.

If you need any help or support with any library issue including accessing library resources or subject specific information, please contact your Faculty Librarian:

Mr Matthew Adams
Email: adamsm2@hope.ac.uk

Support is also available from the Subject Support Points in the library; pop along to get some advice and help from a librarian.
Alternatively, you can email askalibrarian@hope.ac.uk from within this email address you can also invite us to chat.
There are full details of all library services, facilities and support available from the Library Services web pages at www.hope.ac.uk/gateway/library/.

Moodle:

Moodle is Liverpool Hope's virtual learning platform. Each 60 C unit has its own Moodle which is maintained by your course leader. You will also be registered on a Faculty/Departmental Moodle. Moodle is intended to support you through your programme of study and enhance your learning experience. Moodle provides a space in which all care and some additional resources can be stored and/or signposted. This will include previous year's evaluation outcomes and External Examiners reports. Some tutors may create activities for you to carry out online to help you measure your own progress. For some groups tutors may want to use the collaborative forums in which you can communicate with each other and work on joint projects.

From the University website home page select 'Staff/Student Gateway', 'MyHope' and then 'Moodle'. Use your network username and password to login.

If you have any difficulties accessing the Moodle for your course please contact itshelp@hope.ac.uk

Attendance, Punctuality and Behaviour:

The University requires ALL students to attend ALL teaching sessions unless there are significant mitigating circumstances. You are expected to arrive on time to your scheduled sessions (and any other pre-arranged meetings you may arranged with tutors).

If you miss any sessions you should expect to be contacted by your tutor to find out why you have been absent,

If you miss a scheduled session it is your responsibility to catch up on what you have missed.

If you are late arriving to a session please enter the teaching room, please make your apology to the tutor, and quietly take a seat without disturbing any other students.

If you arrive any later than 15 minutes after the start of a session your tutor may refuse to allow you to join the class. If your tutor refuses entry on the grounds of being late you must follow their decision. They may allow you to come in after the break. If they refuse entry due to lateness, you are advised to ask if you can join after the break. If they will allow this, ensure you find out what time the session is due to start back after the break (and be on time!). All students are expected to be punctual, professional and courteous with staff and fellow students at all times.

During taught sessions you must turn off your mobile phone (unless there is a very good reason why you cannot e.g. childcare issues or sick family member). If you do need to leave your phone on please be courteous and inform your tutor before the start of the session. If you do not comply with these courteous requests your tutor may ask you to leave the class as taking calls or texting in class is very disruptive.

If you email your tutors please do so in a courteous fashion which reflects the professional nature of your relationship and your expectations of a graduate career.

University Policies:

You can access University Policies on:

- The academic responsibility of students;
- The progression and award regulations associated with your degree
- Plagiarism
- The provision of assessment arrangements for students with a disability, illness, injury or adverse personal circumstances
- Academic appeals

by looking at the University website at www.hope.ac.uk/gateway/supportandwellbeing/studentadministration/policiesandprocedures/.

You can access information on support services at www.hope.ac.uk/gateway/students/.

Departmental Facilities:

The programme is taught within a small department which prides itself on having pleasant, well-equipped laboratories such as the Forensics and Security laboratory. As well as the high specification teaching PCs the department has invested heavily over the last few years

in exotic equipment such as the 3D printer and the robotics equipment, all of which is available for use by students.

Personal Computers

Student Procurement

Staff are happy to assist you with the procurement of a personal computer for this course, we cannot advise you which specific model to get but we can assist you with the minimum specification of what is required. When purchasing a machine for this course you should purchase a machine with the following minimum specification:

Hardware Requirements

1.6 GHz or faster processor
1 GB of RAM (1.5 GB if running on a virtual machine)
4 GB of available hard disk space
5400 RPM hard disk drive
DirectX 9-capable video card that runs at 1024 x 768 or higher display resolution

Operating System and Software Installation and Troubleshooting

Supported operating systems

- Windows 10
- Windows 8.1
- Windows 8
- Windows 7 Service Pack 1

Course Related Software

This course uses the latest version of Uniform Server ZeroXIII which is free open source software and can be downloaded here: http://www.uniformserver.com/

The course also expects you to have multiple web browsers installed such as:

- Google Chrome

  Download from: https://www.google.com/chrome/

- Internet Explorer

  Download from: https://www.microsoft.com/en-gb/download/internet-explorer.aspx

- Firefox

  Download from: https://www.mozilla.org/

- Opera

  Download from: http://www.opera.com/

You will also be expected to produce reports, reflections, essays etc. and a suitable word processer will be required for this. The University provides Microsoft Office free of charge to all students. Please contact itshelp@hope.ac.uk for further information.

External Examiners

Students often ask questions about how we know that their degree is broadly of the same standard as degrees awarded for similar courses by other universities. In the UK we have a system called external examining which is one of several ways that we confirm that standards are met. An external examiner is generally an experienced lecturer from another university who is appointed by Liverpool Hope to offer an independent view as to whether the work of Hope students on a course is of the correct standard. The external examiner does this by looking at a sample of work (e.g. assignments, exam answers, dissertations), discussing the work with your lecturers and attending the assessment boards to endorse results. They then produce an annual report which tells us about any concerns they have and any good practice they have identified. The external examiners' reports are made available to student representatives and school representatives via Moodle and are also discussed in Staff Student Committees.

The main external examiner for your course is listed at the front of this booklet. Please note that students are not permitted to contact external examiners directly and external examiners will not respond to any communication from individual students. If you have any concerns about your course then please speak to your programme leader."

Internal Examiners

The Internal Examiners (usually the academic team in your Department) are specifically responsible for:

[a] the preparation of coursework assessment requirements and draft examination question papers, and ensuring that they are appropriate to the Level, syllabus content and learning outcomes;

[b] the initial assessment, and internal moderation*, of coursework assignments and examination scripts;

[c] ensuring that the Assessment Co-ordinator is able to make available to External Examiners an agreed range of internally moderated coursework assignments and examination scripts in good time to enable the External Examiners to undertake external moderation before the meeting of the Panel of Examiners or Assessment, Progression & Award Board.

In the Department of Mathematics and Computer Science assessments are internally moderated using the following strategy:

a) Moderators should examine a sample of work for each formally approved assessment that counts towards the overall result for the postgraduate module / undergraduate credit-rated block.

b) The sample is expected to include:

- work within the first class band
- fails;
- work just below a key boundary[eg 34, 39, 69];
- a representative sample of other work from top, middle and bottom grades

c) The size is sufficient to enable the moderator to form a judgement about the appropriateness of the standards that have been applied; if a moderator believes that the sample has been inadequate to enable her/him to make relevant judgements, s/he may request access to a wider range of material.