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Unit Title	Mobile and Creative Coding (blended)
FHEQ Level	Level 5
Unit Code	CRC20205
Credit Value	30
Unit Type	Subject

Learning Hours			
Staff – Student Contact Hours		Independent Study Hours	
Classes	40	Independent study	195
Supervised access to Ravensbourne resources	35	Preparation for assessment	30
Total		300	

Unit Description

This unit aims to give learners the opportunity to develop skills, knowledge and understanding in mobile application design aesthetics and develop responsive websites and mobile applications. Some Students may choose to develop their skills in programming for media devices such as vision mixers, lighting controls, or choose a software-based project where they are using a mix of animations with computer graphics. Students may choose relevant (Application Programming Interface) APIs to link their work with technologies that enable various functionality within a given use case.

This unit also focuses on the technology underpinning client-server applications. This includes relational database systems, mainly from a development perspective, offering an introduction to data modelling and database implementation. The focus is on applications of relational and non-relational databases and techniques relevant to the creation of dynamic web applications such as form handling and templating.

Students will also examine the cloud-based database solutions, and how an efficient data design follows through into an effectively developed database management system. Students will evaluate the merits and demerits of available DBMS.

The Five Principles underpin the Mindsets and Skillsets Manifesto and are the foundation upon which all course curriculum frameworks and unit specifications are based. The relevant Principles as stated below have been mapped against the Learning Outcomes relevant to each course unit and at each level (see Programme Specifications for full description of the Five Principles):

1. Cultivate / Where the individual thrives.
2. Collaborate / Where disciplines evolve.
3. Integrate / Where education engages industry.
4. Advocate / Where purpose meets practice.
5. Originate / creativity meets technology.

Unit Indicative Content

- Mobile application design and development
- Programming languages used for mobile development
- Interaction with data
- Data forms, input and output
- Dynamic content creation
- Data driven graphics on the web
- Data visualisation techniques
- Open source and vendor specific databases
- Interaction with databases using appropriate tools
- Internet and Intranet hosting and available server technologies
- Front end and back end technologies
- Web development standards
- Search Optimisation
- Client-side and Server-side security
- Safe communication, encryption
- HTTP, HTTPS, SSL etc.
- Data Management
- ERD and DFD
- Relational and Non-relational databases

Unit Aims

- 1.** To develop in depth knowledge on mobile application design, development and choices between open source and vendor specific systems
- 2.** To differentiate between available development environments based on user requirements
- 3.** To appreciate the needs of dynamic websites, mobile applications and immersive experiences
- 4.** To develop an understanding of mobile application security and potential solutions for cloud based and resident applications

Unit Learning Outcomes

(to be selected from the Mini Manual)

LO 1 Research/Inspiration

Analyse and interpret information gathering techniques using a wide range of sources, providing visual, contextual and industry case-study research as appropriate.

Related Principle: ORIGINATE

LO 3 Development/Prototyping

Analyse a range of potential pathways that result in appropriate solutions, informed by an understanding of the principles of the creative process.

Related Principle: INTEGRATE

LO 4 (Pre) Production

Employ relevant knowledge of production skills alongside a grasp of the creative potential of a selection of processes, materials and methods that inform creative and academic practice.

Related Principle: COLLABORATE

LO 6 Critical and creative Mindsets

Analyse conceptions of diverse practice and use this to inform a course of action

Related Principle: ORIGINATE

Learning and Teaching Methods

This unit will be delivered using a combination of:

- Lectures / Seminars
- Online activities
- Self-directed independent study
- Peer learning, group discussion, guest speakers

Assessment methods and tasks

Assessment tasks	Weighting (%) (one grade or multi-grade unit)
Portfolio of development log	50%
Individual artefact presentation	50%%

Indicative Assessment Criteria

Demonstrate understanding of mobile application design, development and choices between open source and vendor specific systems (LO1)

Select a suitable development environment for your selected application (LO3)

Apply knowledge for development of a dynamic website, mobile application or immersive

experience (LO4)

Evaluate risks associated with mobile application security (LO1)

Design and analyse a working solution for a selected situation (LO4)

Evaluate the risks and suggest actions for web and cloud-based systems. (LO6)

Essential Reading list

CHENG, FU. BUILD MOBILE APPS WITH IONIC 4 AND FIREBASE: Hybrid Mobile App Development. APRESS, 2018.

Chishti, Zarrar. Cross over to HTML5 Game Development: Use Your Programming Experience to Create Mobile Games. Apress, 2017.

Journals

International Journal of Database Management Systems

Journal of Database Management

The Computer Journal

Journal of Emerging Trends in Computing and Information Sciences

Further reading and resources will be identified in your Project Brief.