**Web and Mobile App Development**

Dr. Huiyu Zhou

E-mail: [h.zhou@qub.ac.uk](mailto:h.zhou@qub.ac.uk)

**Office and help hours of the lecturer:**

Office: Room 02.003, 8 Malone Road.

Office hours: Wednesday 13:00-15:00 or by appointment.

Phone number: 028 90974875.

**Teaching assistant**: Miss Narelle Allen. E-mail: [n.allen@qub.ac.uk](mailto:n.allen@qub.ac.uk). Office: 01.015, Computer Science at Elmwood, Building 1. Phone number: 028 90975302.

**Course contents:**

1. Android Application: Semantic elements, location and sensor management, data access, storage capability, user interface.
2. Mobile Web Development: Web design basics and practice.

**Learning outcomes:**

1. Demonstrate the capability to design and implement basic Android Applications;
2. Be able to use HTML to create basic mobile web pages;
3. Develop the ability to adopt a critical approach for software designs;
4. Be able to document a given software design;
5. Be able to work independently towards the solution of a problem.

**Assignments and exam:**

1. Assessment:
   1. Exam paper – 50% (Android applications - 40% and smartphone web development - 10%).
   2. Two lab exercises (assessed) – 20% (each one is 10%). Details follow later.
   3. Group project (assessed) – 30%. Details follow later.
2. MSc students: at least 50 out of 100 in total in order to pass the course module.
3. Undergrad students: at least 40 out of 100 in total in order to pass the course module.
4. Exam style: Exemplar questions will be presented during lectures/tutorials/revisions. Students can find the past papers on-line.

**Lecture and lab sessions:**

1. Lectures/tutorials: 20/10 hours
   1. Lectures: week 1 to week 10.
   2. Tutorials: week 2 to week 11.
   3. Please bring along your laptop so that we can program in the classroom.
2. Labs: 20 hours
   1. Friday’ labs: week 2 to week 11.
   2. Time allocation: 1-3 pm, Friday.
   3. Venue: ECS1/002/005 and ECS1/01/007.
   4. Please bring along your student card with you in order to collect an Android tablet during a lab session.
3. Walk-in sessions:
   1. Weeks 1-5: Wednesday, ECS1/02/005 (10 am – 12 pm).
   2. Weeks 6-7: Tuesday, 8th and 15th March, ECS1/02/014 (1-3 pm).
   3. Weeks 8-10: Wednesday, ECS1/02/014 (10 am – 12 pm).
4. Formative quiz or questionnaire: every week.
5. To achieve well, at least 12-15 hours per week are expected for this module.

**Lecture plan:**

This is a *rough* schedule:

Lecture 1.1: Introduction.

Lecture 1.2: Building up an Android application.

Lecture 2.1: User interface.

Lecture 2.2: Event handler.

Lecture 2.3: Event handling for silent toggle mode.

Lecture 3.1: Home-screen widget.

Lecture 3.2: In-class exercises.

Lectures 3.3-4.1: Home-screen widget.

Lecture 4.2: Sensor data measurement.

Lecture 4.3: In-class exercises.

Lecture 5.1: Assignment 2 and group project.

Lecture 5.2: Internal storage.

Lectures 5.3-6.1: SQLite database.

Lectures 6.2-6.3: Google map application.

Lecture 7.1: Feedback to assignments/challenges.

Lecture 7.2: In-class exercises.

Lectures 8.1-8.2: Invited guest lecture (Allstate, Belfast).

Lecture 8.3: Smartphone web development.

Lecture 9.1: PHP tutorial.

Lectures 9.2-10.1: Smartphone web development.

Lecture 10.2: In-class exercises.

Lecture 10.3: Revision lecture.

**References:**

1. <http://developer.android.com/training/index.html>
2. Android Application Development for Dummies, Donn Felker, Wiley Publishing, Inc., NJ, 2011.
3. Beginning smartphone web development: building Javascript, CSS, HTML and Ajax-based applications for iPhone, Android, Palm Pre, Blackberry, Windows mobile and Nokia S60. Gail Fredrick, Publisher: Apress; 1 edition, 2010.