

# UG Exam Performance Feedback

## Third Year

### 2016/2017 Semester 2

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COMP38512 Digital Wireless Communication and Networks

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**Comments** As with recent years, attendance at lectures and help sessions was very low with 50%+ of students only seen at the very first lecture. It is not possible to do well on this course if you miss the majority of the course as it is very different to other COMP modules! For 2017 the course used a room with no video provision for half the sessions meaning that only lecture notes were available for these lectures with no explanations.

Students are required to answer 3 questions in 2 hours from a choice of 4.

Q1. This question should have been easy as this material was heavily emphasised during the course, the badly attended revision session and the on-line materials. However, only 4 students got marks over 50% and another 4 got less than 25% for what should have been a gift of a question. This was shocking to me.

Q2. This question was about a core topic of the course being how mobile phone systems work. It again showed a serious lack of any knowledge in most answers. It was as though the lecture notes had not even been read! For part b, a scientific case was requested. I had talked about this scenario and similar ones several times looking at the science, emotions and therefore politics. In order to minimise exposure to radio frequency energy the closer the mobile base station is to its users the better, phones always use close to the minimum energy required for successful communication and adjust their power output many times a second to achieve this except for base station beacon frames which are sent at a specified power level to enable simple loss calculations. The physics is very clear, the inverse square law but our emotions tend to tell us the opposite is the case.

Q3. Again this should have been a gift of a question to anybody with a minimum of subject knowledge. Answers giving, for example, reasons and extra costs for repeated transmissions, collisions where two or more devices transmit near a receiver at the same time.... All Got generous marks awarded. Most answers clearly had no idea what a Bluetooth Piconet is or any idea how Bluetooth uses frequency hopping to minimise transmission collisions between adjacent/overlapping Piconets! This is why lots of people can sit on a bus or train using wireless headphones connected to their mobile phone listening to different sounds simultaneously over Bluetooth.

Q4. Few students attempted this. There were 2 exceptionally high results and two very weak ones from the 4 attempts. There was a lot to read and you needed to have studied the research readings at the end of the course. I know 2 people read these and knew the material which is all about future wireless networks and their diverse applications supporting sensors etc for the Internet of Things.

For 2018, I think I must introduce some coursework to force students to at least look at the materials.

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