# Feedback for EEE6430 Session: 2010-2011

**Feedback:** Please write simple statements about how well students addressed the exam paper in general and each individual question in particular including common problems/mistakes and areas of concern in the boxes provided below. Increase row height if necessary.

**General Comments:**

Overall exam average mark is reasonable.

**Question 1**:

Reasonable average mark for question.

(a) Almost all got the bit sequence of the normal burst, but the logical channels caused a few problems.
(b) The key aspects here are the 3 timeslot delay between the BTS and MS, and the time advance which affects the mobile's perspective only.
(c) Some used a TA of 68 to calculate the distance, when the question quoted 63.

**Question 2**:

Question average mark a little low.

(a) Quite a straightforward comparison between GSM and TETRA.
(b) An Sa envelope required here sampled at the 17Hz TETRA burst harmonics, with an outline of the Fourier and convolution techniques used (derived in lectures for the GSM spectrum).
(c) Intermodulation products could cause low frequency components at ~17nHz intervals.

**Question 3**:

Question with the lowest average mark.

(a) Most figured the near/far problem with CDMA, and marks were given for explaining the closed loop cycle involving SIR estimates and DPCCH feedback control.
(b) Explanations of bit and carrier cancellation and ways to combat this using rake reception and diversity techniques required here.
(c) The idea here was that the time delay ~ 2 WCDMA bits, but only a fraction of a GSM bit, hence use rake reception in the former. Carrier cancellation would be relevant to both protocols.

**Question 4**:

Good average mark.

(a) Easy.
(b) Bookwork that most who attempted got right. A few marks were lost for jumps or discontinuities in the derivation.
(c) Calculations straight from the derivations. A few people used the log value of E in the load factor equation.