

MSc Module: ELEC0086

Communications Systems Modelling (CSM)



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A Course Outline

Course Outline

- Introduction and Outline of the Course **LT** (**KW**)
- Basics of Simulation and Modelling Methodology **LT** (**KW**)
- Representation of Signals and Systems in Simulation **LT** (**YA**)
- Modelling and Simulation of LTI and Time-varying Systems **LT** (**KW**)
- Modelling and Simulation of Nonlinear Systems **LT** (**KW**)
- Pre-Lab: OFDM Wireless Networks **LT+LAB** (**KW**)
- Queuing theory **LT** (**RC**)
- Simulating the Internet **LT+DEMO** (**RC**)

KW – Kit Wong

YA – Yiannis Andreopoulos

RC – Richard Clegg

LT=Lecture; **LAB**=Laboratory; **DEMO**=Demonstration

The LAB (via ZOOM)

- ❑ 3 Hours in **WEEK 12** (10am—1pm 17 Nov 2020 TUESDAY)
 - Lab 0: Introduction to MATLAB Programming
 - Lab 1: BER Simulations for Digital Modulation in Noisy Channels
- ❑ 3 Hours in **WEEK 13** (10am—1pm 24 Nov 2020 TUESDAY)
 - Lab 2: OFDM in Frequency Selective Fading Channels
- **Exact date and time** are to be decided
- **Zoom Links** will be emailed to you near the time
- You will need to have **MATLAB installed in your computer**

Schedule

Week	Date (dd/mm/yyyy)	Session	Topic	Tutor
6	06/10/2020 10am-11am	1	Induction (on Zoom)	KW
6	For day of that week	2	Basics of Simulations and Modelling Methodology	KW
6	For day of that week	3	Representation of Signals and Systems (I)	YA
7	For day of that week	4	Representation of Signals and Systems (II)	YA
8	20/10/2020 10am-12pm	5	Zoom Q&A Session	YA
8	For day of that week	6	Modelling and Simulations of LTI Systems (I)	KW
9	For day of that week	7	Modelling and Simulations of LTI Systems (II)	KW
10	For day of that week	8	Modelling and Simulations of Non-Linear Systems	KW
10	03/11/2020 10am-12pm	9	Zoom Q&A Session	KW
11	Reading Week			
12	17/11/2020 10am-1pm	10	LAB0: BER (on Zoom)	KW
13	24/11/2020 10am-1pm	11	LAB1: OFDM (on Zoom)	KW
14	For day of that week	12	Probability and Markov Chains	RC
15	For day of that week	13	Queueing Theory	RC
15	08/12/2020 10am-12pm	14	Zoom Q&A Session	RC

Teaching & Assessments

● Teaching

- Recorded videos
- Scheduled Zoom Q&A session and discussion

● Assessment

- 50% closed-book written examination
- 50% lab report submission (Lab 2 work only)