Department of Electrical and Electronic Engineering

Postgraduate Information: 2016-17

MSc Communications & Signal Processing
3rd October 2016

Dear MSc Student,

Welcome and congratulations on obtaining a place in the Department of Electrical and Electronic Engineering at Imperial College. I join all my colleagues in wishing you every success in your studies over the coming year.

The information attached is intended to give you a rough idea of what to expect during your studies here: the lecture programme and assessment criteria of the MSc programme that you will be expected to follow; information on the resources available to help you to achieve your objectives; and a description of our responsibilities to you as the provider of resources and academic supervision. There is also a section on the welfare and pastoral support services that you can turn to in the event of personal or academic difficulty.

There will be an opportunity to discuss this in more detail with your Course Director this week and also at an individual interview to be arranged for you later in the term with your Personal Tutor. In the meantime may I welcome you to what I hope you will find is a supportive and thriving research community.

Yours sincerely

Professor Eric Yeatman
Head of Department
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Contents</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>South Kensington Campus Map</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>Departmental Postgraduate Administration</td>
<td>2</td>
</tr>
<tr>
<td>3.</td>
<td>MSc Communications &amp; Signal Processing Administration</td>
<td>3</td>
</tr>
<tr>
<td>4.</td>
<td>MSc Communications &amp; Signal Processing Lecturers</td>
<td>4</td>
</tr>
<tr>
<td>5.</td>
<td>Where to find more information about the course</td>
<td>7</td>
</tr>
<tr>
<td>6.</td>
<td>Sources of Help</td>
<td>8</td>
</tr>
<tr>
<td>7.</td>
<td>Resources and Facilities</td>
<td>9</td>
</tr>
<tr>
<td>8.</td>
<td>Attendance Monitoring &amp; Reporting Absences from College</td>
<td>10</td>
</tr>
<tr>
<td>9.</td>
<td>Key Dates for the Academic Year</td>
<td>10</td>
</tr>
<tr>
<td>10.</td>
<td>Modules, Assessment Criteria and Degree Classification</td>
<td>11</td>
</tr>
<tr>
<td>11.</td>
<td>The Lecture Programme and the Examinations</td>
<td>12</td>
</tr>
<tr>
<td>12.</td>
<td>Plagiarism</td>
<td>14</td>
</tr>
<tr>
<td>13.</td>
<td>Notification of Results</td>
<td>14</td>
</tr>
<tr>
<td>14.</td>
<td>Interpretation of Grades and Marks</td>
<td>14</td>
</tr>
</tbody>
</table>
Key places

3. Beit Building – Imperial College Union
11. Electrical Engineering Building
13. Imperial College and Science Museum Libraries
23. Sherfield Building (Administration) please enter through the main doors at the Western end

Level 1: Bank, Catering, Main Dining Hall, Security
Level 2: Great Hall, ICU Shop, Junior Common Room, QT Snack Bar
Level 3: Registry
Departmental Postgraduate Administration

Prof. Eric Yeatman, Head of Department
(e.yeatman@imperial.ac.uk) EEE Room 609

Prof. Andrew Holmes, Director of Postgraduate Studies
(a.holmes@imperial.ac.uk) EEE Room 701
Andrew has overall administrative responsibility for the Department’s postgraduate affairs. He is responsible for ensuring that all College regulations are applied appropriately in the Department.

Dr. Imad Jaimoukha, Postgraduate Tutor
(i.jaimoukha@imperial.ac.uk) EE Room 1113
Imad is responsible for the welfare and training of students. Every new student will be invited to meet Imad, who is available on Mondays between 1-2pm. If you need to meet Imad to discuss any difficulties with your studies or if you have personal circumstances which are hindering your progress, please e-mail him to arrange an appointment.

Mr. Calum MacLeod, Postgraduate Office
(c.macleod@imperial.ac.uk) EEE Room 614
Calum is always available to give advice on postgraduate matters and provide the required forms for Mitigating Circumstances, Interruption of Studies etc.

Mrs. Angela Goldfinch, Subject Librarian for Electrical & Electronic Engineering
(a.goldfinch@imperial.ac.uk) EEE Library, Room 607
Angela is normally available in the department library on Tuesday and Thursday 13:00 – 16:30 (times vary occasionally – actual times will be advertised on the door of the library).
Dr. Tania Stathaki – MSc Course Director  
(T.stathaki@imperial.ac.uk)  
EEE Room 812  
020 759 46229

Miss Charlotte Grady - MSc Communications and Signal Processing Course Administrator  
(c.grady@imperial.ac.uk)  
EEE Room 810  
020 759 46267  
Charlotte is available to give advice on all general MSc Communications and Signal Processing matters.

Dr. Cong Ling – MSc Laboratory Co-ordinator  
(c.ling@imperial.ac.uk)  
EEE Room 815  
020 759 46214

Mr Paul Norman – MSc Laboratory Technician  
(p.norman@imperial.ac.uk)  
EEE Room 303b  
020 759 46344  
Paul manages the MSc Laboratory (Room 303) and should be contacted for any queries relating to the MSc Laboratory or MSc Study Room (Room 405).
Dr. Javier Barria  
[J.barria@imperial.ac.uk](mailto:J.barria@imperial.ac.uk)  
EEE Room 1012  
020 759 46275  
Course: Traffic Theory & Queuing Systems

Mr. Mike Brookes  
[Mike.brookes@imperial.ac.uk](mailto:Mike.brookes@imperial.ac.uk)  
EEE Room 814  
020 759 46165  
Course: Digital Signal Processing and Digital Filters

Dr. Wei Dai  
[Wei.dai1@imperial.ac.uk](mailto:Wei.dai1@imperial.ac.uk)  
EEE Room 811  
020 759 46333  
Courses:  
1) Coding Theory  
2) Topics in Large Dimensional Data Processing

Prof. Pier Luigi Dragotti  
[P.dragotti@imperial.ac.uk](mailto:P.dragotti@imperial.ac.uk)  
EEE Room 802  
020 759 46192  
Course: Wavelets and Applications
Prof. Erol Gelenbe  
(E.gelenbe@imperial.ac.uk)  
EEE Room 1011  
020 759 46274

Course: Distributed Computation and Networks: a performance perspective

Dr. T-K Kim  
(Tk.kim@imperial.ac.uk)  
EEE Room: 1017  
020 759 46317

Courses: 1) Machine Learning for Computer Vision  
          2) Pattern Recognition

Dr. Cong Ling  
(C.ling@imperial.ac.uk)  
EEE Room 815  
020 759 46214

Course: Information Theory

Dr. Sergio Maffeis  
(maffeis@doc.ic.ac.uk)  
Room 441, Huxley Building  
020 759 48390

Course: Network and Web Security

Prof. Danilo Mandic  
(D.mandic@imperial.ac.uk)  
EEE Room 813  
020 759 46271

Course: Adaptive Signal Processing and Machine Intelligence
Prof. Athanassios Manikas  
(A.manikas@imperial.ac.uk)  
EEE Room 801  
020 759 46266  
Courses:  
1) Advanced Communication Theory  
2) Communication Systems

Dr. Krystian Mikolajczyk  
(k.mikolajczyk@imperial.ac.uk)  
EEE Room 1015  
020 759 46220  
Course: Pattern Recognition

Dr. Tania Stathaki  
(T.stathaki@imperial.ac.uk)  
EEE Room 812  
020 759 46229  
Course: Digital Image Processing

Prof. Eric Yeatman  
(E.yeatman@imperial.ac.uk)  
EEE Room 609  
020 759 46204  
Course: Optical Communication
Where to find more information about the course

Imperial College London has a very comprehensive website with information about each aspect of the course, student life, and the resources, facilities and support available to you. Listed below are the key web pages that you may wish to visit:

a. Electrical and Electronic Engineering Current Students’ Course Handbook
http://www.imperial.ac.uk/electrical-engineering/internal/current-students-course-handbook/

The Electrical and Electronic Engineering Current Students’ Course Handbook webpages contain all of the important information that you will need to know throughout the course. The pages that you may find most useful are listed below:

Assessment information
Attendance and absence
Blackboard: Log-In, User Guide and Self-Enrol details
Examinations
Modules and programmes
MSc individual research project
Option registration
Plagiarism awareness (cheating) and the Plagiarism Awareness online course
Posters (MSc project)
Postgraduate Staff/Student Committee
Professional Skills Development - For MSc students, Graduate School
Reading lists (MSc Courses)
Regulations
Term dates
Timetables

b. Electrical and Electronic Engineering New MSc Students
http://www.imperial.ac.uk/electrical-engineering/study/new-students/new-msc-students/

This webpage has information to help you prepare for the start of the course and to help you settle in to the Department. It includes information such as: Visas, Health and Vaccination Advice, Registration, Week 1 Information, Timetables, Resources, Student Information and Contacts.
c. Imperial College London New Students website

http://www.imperial.ac.uk/students/new-students/

These webpages have sections that provide guidance and advice on ‘Arrivals and Induction’, ‘Fees and funding’ and ‘Making the most of your Imperial experience’.

d. Imperial College London International Student Arrival Guide 2016


This is a 40 page guide including everything that you need to know about moving to London and life in the UK. It includes sections focusing on topics such as Accommodation, Budgeting, Health and Dental Care, Travelling around London and the UK, Visas and Immigration, College Support Services, Shopping, Socialising and Study.

6 Sources of Help

There is clear information online containing details of the support available to you at Imperial College London. Here is a list of some of the different places where you can seek support if you need help or advice on a variety of matters:

The Advice Centre (Imperial College Union) – Welfare and Advice
Careers/Career Planning (EEE Department) and the Careers Service
Chaplaincy
Disability Advisory Service
English Language Support (Centre for Academic English)
Exam Stress Workshops (Health Centre)
Fees, funding and finance
Health Centre
Health, Safety and Security (EEE Department)
Special Examination Arrangements
Student Counselling and Mental Health Advice Service
Student Hub
Student Space (College student support)
Support for non-academic issues

You will be allocated a Personal Tutor soon after you join the MSc course. If you need help with any aspect of the lectures or coursework, speak to the lecturer after a lecture or state your problem in an email to the lecturer, asking for help. The lecturer may be able to provide help by responding with a short email. If it is clear that you need to
speak to the lecturer, please arrange an appointment by email. It is better to show your work to the lecturer and ask where you have gone wrong than to meet with them without having tried to do the work. If you need more help, try asking your Personal Tutor or the Course Director.

7 Resources and Facilities

There are many resources available to you at Imperial College London. As an MSc student in the Department of Electrical and Electronic Engineering there is a dedicated MSc Study Room with computers for you to use. The MSc Study Room is in Room 405, on Level 4 of the EEE Department. This is a quiet study area, so please keep noise levels to a minimum.

There is also a dedicated MSc Laboratory with desk space and computers for you to use. The MSc Laboratory is in Room 303 (Level 3) and is managed by Mr Paul Norman.

The main computing facilities available are in the MSc study room (Room 405, EEE) and the MSc Laboratory (Room 303 EEE). You can access these rooms using your swipe card. There are more computers and quiet study areas in the EEE Library (Room 607, Level 6) and in the Central Library.

Mobile phones
Mobile phones must be turned off while in any lecture theatre, teaching laboratory or library.

Noticeboards
You should consult the notice boards concerning your course regularly. The notice board is located in the MSc Lab, Room 303 on level 3.

Photocopying facilities
Photocopying facilities are available on Level 1. You will need to obtain a photocopying card to enable you to use the machines. These can be purchased from the EEE Stores on Level 1.

Incoming mail
Mail for MSc students will be delivered to the pigeon holes in the Mail Room on Level 6. The MSc courses have four pigeon holes on the right hand side and this is where your mail will be dropped off. However, you should also check the undergraduate pigeon holes on the left hand side as MSc mail is sometimes delivered there.
8 Attendance Monitoring & Reporting Absences from College

Students are required by the general College regulations to attend regularly. All lecture rooms in our Department, including the MSc Laboratory (Room 303) and the computer room (Room 304), have card readers (pictured) installed on the inside of the rooms. You are required to ‘touch in’ on at least two different days per week, using any of the card readers. The card readers are monitored on a regular basis.

The scanners to unlock the doors on the outside of the doors are part of a College wide system and do not record attendance.

If the card reader bleeps three times when you scan your card this means that your card details are not working. If the card reader bleeps three times please contact Daniel Harvey on d.harvey@imperial.ac.uk or 020 7594 6324.

Students must notify the EEE Department's Postgraduate Office, preferably by email to c.macleod@imperial.ac.uk if they will be away from College for more than 3 days, with the exception of the official College Closures at Christmas and Easter. If your absence is due to illness you should produce a medical certificate after 7 days’ absence.

9 Key Dates for the Academic Year

The main work on your Individual Research Project will take place from late May 2017 to 8th September 2017 with the following submission deadlines:

- **Initial Project Report**: 17 March 2017 at 4:00 pm
- **Electronic version of Poster**: 01 September 2017 at 4:00 pm
- **Soft-bound and electronic versions of Final Project Report**: 08 September 2017 at 4:00 pm
- **Poster Presentation**: 11 September 2017 from 2:00 pm
- **Last official day of the MSc course 2016/2017**: 29 September 2017

The compulsory Online Plagiarism Awareness Course for Master's Students must be completed within 1 month of the course start: deadline 31st October 2016.
Modules
A module refers to a lecture course and associated activity. You need to choose 8 or 9 modules (i.e. subjects) on which to be examined from the available examinable options. The only constraint on your choice is that 4 modules must be from the compulsory courses, and must not have exam/lecture timetable clashes.

You cannot change your choice after the registration deadline without the permission of the Course Director. The pass/fail decision and degree classification are based only on the best 8 module marks among all possible choices that include at least 4 compulsory modules. In other words, if the 9 modules selected include 4 compulsory modules only, then the mark discarded will be the lowest of the non-compulsory modules being taken.

At the end of your degree your degree classification (Fail, Pass, Merit or Distinction) will be based on three marks (examination, laboratory and individual research project marks). For more details about the criteria for each degree classification please see the MSc Communications and Signal Processing Programme Specification.

1. Examination Mark
This is the average mark for the 8 individual modules that are counted. Each of the 8 examination results is equally-weighted.

2. Laboratory Mark
The assessed laboratory work involves experimental work and associated theory, provided by Dr. Cong Ling. The overall mark for this component of assessment is a weighted sum of the marks for the various items of laboratory work that you have completed. The amount of work involved will be approximately the equivalent of two examinable courses (i.e. two modules).

Dr. Cong Ling's Advanced Communications and Signal Processing laboratory work will be carried out in the MSc Laboratory (Room 303). Details and the time it starts will be emailed to you in due course and your work on it will be marked as part of your assessment. You can find more information on the ACSP lab's webpage - http://www.ee.ic.ac.uk/msc_csp/ACSPLab.html.

3. Individual Research Project Mark
The Project will be assessed based on your performance on the Project, the Project Report and Poster Presentation in mid-September. Your Project mark is a weighted
sum of these (85% Project Report and 15% Poster Presentation).

A list of projects proposed by staff will be published in mid-December. You will be required to submit your Project preferences 1-2 weeks after this. In addition, students may propose a Project themselves or carry out a Project as an intern with a company or at other universities provided the MSc Course Director agrees that the Project is suitable.

11 The Lecture Programme and the Examinations

Overview
The lecture programme provides a broad coverage of material on communications and signal processing. The courses are listed below. Most lectures are held in the EEE Building. In addition to the course lectures, there is a programme of seminars by outside speakers, which we also encourage you to attend although many are aimed at researchers. These are generally held in the Gabor Seminar Room (Level 6 EEE Building). These talks are announced using the EEE e.e.talks service via email.

Important notes on the modules
It would be wise to sample the first few lectures for each module at the start of each term in order to help you choose which subjects you will take for examination purposes. Of course, you need to do the coursework (if applicable) if you wish to be examined on a module. You may attend the lectures for any module without choosing to be examined on it.

Coursework
The lecturer sets a date by which time the coursework has to be submitted. Normally at least five weeks is allowed for the completion of each piece of coursework except when coursework consists of several relatively small parts that are issued separately. We aim to have coursework marked within 2 weeks of the deadline. Students are not allowed to keep their marked coursework since we need to keep it for the External Examiner to inspect during one of their visits to the Department. You can find the coursework percentage for each course on the relevant module page online and in the table below.
## Compulsory Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Lecturer</th>
<th>Coursework (%)</th>
<th>Term</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE9-SC1</td>
<td>Mr M. Brookes</td>
<td>0</td>
<td>Autumn</td>
<td>Digital Signal Processing and Digital Filters</td>
</tr>
<tr>
<td>EE9-SC2</td>
<td>Prof. A. Manikas</td>
<td>15</td>
<td>Autumn</td>
<td>Advanced Communication Theory</td>
</tr>
<tr>
<td>EE9-SC3</td>
<td>Dr C. Ling</td>
<td>15</td>
<td>Autumn</td>
<td>Probability and Stochastic Processes</td>
</tr>
<tr>
<td>EE9-SC4</td>
<td>Prof. D. P. Mandic</td>
<td>100</td>
<td>Spring</td>
<td>Adaptive Signal Processing and Machine Intelligence</td>
</tr>
<tr>
<td>EE9S-LAB</td>
<td>Dr C. Ling</td>
<td>100</td>
<td>Autumn</td>
<td>MSc CSP Laboratory</td>
</tr>
<tr>
<td>EE9S-PRJ</td>
<td></td>
<td></td>
<td>2 &amp; 3</td>
<td>MSc CSP Project</td>
</tr>
</tbody>
</table>

## Optional Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Lecturer</th>
<th>Coursework (%)</th>
<th>Term</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE9-SO7</td>
<td>Dr. J. A. Barria</td>
<td>0</td>
<td>Spring</td>
<td>Traffic Theory and Queuing Systems</td>
</tr>
<tr>
<td>EE9-SO9</td>
<td>Prof. E. M. Yeatman</td>
<td>0</td>
<td>Autumn</td>
<td>Optical Communication</td>
</tr>
<tr>
<td>EE9-SO11</td>
<td>Dr. W. Dai</td>
<td>0</td>
<td>Autumn</td>
<td>Coding Theory</td>
</tr>
<tr>
<td>EE9-SO14</td>
<td>Dr. T. Stathaki</td>
<td>0</td>
<td>Autumn</td>
<td>Digital Image Processing</td>
</tr>
<tr>
<td>EE9-SO20</td>
<td>Dr. C. Ling</td>
<td>0</td>
<td>Spring</td>
<td>Information Theory</td>
</tr>
<tr>
<td>EE9-SO22</td>
<td>Prof. P.L. Dragotti</td>
<td>25</td>
<td>Spring</td>
<td>Wavelets and Applications</td>
</tr>
<tr>
<td>EE9-SO23</td>
<td>Prof. E. Gelenbe</td>
<td>100</td>
<td>Spring</td>
<td>Distributed Computation &amp; Networks: a performance perspective</td>
</tr>
<tr>
<td>EE9-SO24</td>
<td>Dr. S. Maffeis</td>
<td>15</td>
<td>Spring</td>
<td>Network and Web Security</td>
</tr>
<tr>
<td>EE9-SO25</td>
<td>Dr. T-K. Kim</td>
<td>100</td>
<td>Spring</td>
<td>Machine Learning for Computer Vision</td>
</tr>
<tr>
<td>EE9-SO27</td>
<td>Dr. W. Dai</td>
<td>30</td>
<td>Autumn</td>
<td>Topics in Large Dimensional Data Processing</td>
</tr>
<tr>
<td>EE9-SO29</td>
<td>Dr. T-K Kim; Dr. K Mikolajczyk</td>
<td>100</td>
<td>Autumn</td>
<td>Pattern Recognition</td>
</tr>
</tbody>
</table>

## Unassessed Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Lecturer</th>
<th>Coursework (%)</th>
<th>Term</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE9-SU30</td>
<td>Prof. A. Manikas</td>
<td>100</td>
<td>Autumn</td>
<td>Communication Systems</td>
</tr>
</tbody>
</table>
15.8 Plagiarism

Please take plagiarism very seriously when preparing your coursework and Project Report.

As it is a valuable part of the educational process, you are free to discuss the coursework with other students. However, unless it is specified to be group work, your submission for marking must be entirely your own work. You must not copy any part of another person’s work (i.e. you must not copy any part, or all, of the text, equations, programs, figures, graphs, etc.). You must not copy material from any publication without making it clear what you have copied (usually by enclosing the copied material in ‘ ’ and following it by a reference such as [Page 32, 5].) There will be serious consequences for you if we detect any copying from another student or any unacknowledged copying from the web or any publication.

All Master’s students are required to complete a Master online plagiarism awareness course. The full course details can be found here: http://www.imperial.ac.uk/study/pg/graduate-school/professional-skills/masters/online/

13 Notification of Results

You will be given a provisional indication of your performance in the exams (subject to confirmation by the Board of Examiners) in July or August 2016. Your final results will not be available until after an Examiners’ Meeting in late October 2016. All grades and marks are provisional until confirmed by the Board of Examiners. Before then, provisional indications of your exam results can be included in confidential references for potential employers or other Universities.

Your final MSc degree classification (Fail, Pass, Merit or Distinction) and your transcript will be made available to you from the Registry website soon after the Board of Examiners Meeting (usually by early-November). Registry will email you instructions to allow you to view your transcript once it is ready.

14 Interpretation of Grades and Marks

The table below is designed to give a helpful interpretation of the grades for coursework, Project and examination marks. Please note that these interpretations apply to individual items of coursework and exam questions (for which the pass mark is 50%).
<table>
<thead>
<tr>
<th>Grade on coursework</th>
<th>Mark (%) (on transcript)</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Distinction Quality</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>A+</strong></td>
<td>100</td>
<td><strong>Distinction standard</strong> - an exceptionally well presented exposition of the subject, showing: (i) command of the relevant concepts and facts, (ii) a high critical or analytical ability, (iii) originality, and (iv) evidence of substantial outside reading (where applicable). Distinction standard - excellent answer - a very well presented exposition of the subject, showing many of the above features, but falling short in one or two of them</td>
</tr>
<tr>
<td><strong>A</strong></td>
<td>70</td>
<td><strong>Merit standard</strong> - Good to very good answer which (i) shows a clear grasp of the relevant concepts and facts, (ii) gives an accurate account of the relevant taught material (as exemplified in the model answer), and (iii) shows evidence of some outside reading or of critical or analytical ability</td>
</tr>
<tr>
<td><strong>B</strong></td>
<td>60</td>
<td><strong>Pass standard</strong> - adequate to quite good answer which (i) shows a grasp of the basic concepts and facts, (ii) gives a mainly accurate account of at least half of the relevant taught material (as exemplified in the model outline answer), and (iii) does not go beyond that, or goes beyond that but is marred by significant errors</td>
</tr>
<tr>
<td><strong>C</strong></td>
<td>50</td>
<td><strong>Fail standard</strong> - Unsatisfactory answer: shows only a weak grasp of the basic concepts and facts, and is marred by major errors or brevity; presents only about one third to one half of the relevant taught material Shows a confused understanding of the topic; presents less than a third of the relevant taught material Answer is too inaccurate, too irrelevant, or too brief to indicate more than a vague understanding of the topic, less than a quarter of the relevant taught material Presents only one, two or three sentences or facts that are correct and relevant to the topic Contains nothing correct that is relevant to the topic</td>
</tr>
<tr>
<td><strong>D</strong></td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>