Department of Electronic and Information Engineering

Higher Diploma Programme in

Electronic and Information Engineering

Full-time Credit-based

Code: 42375

Programme Booklet

2013/2014
1. GENERAL INFORMATION

1.1 Cohort of Intakes

This programme booklet is the definitive programme document for the 2013/14 cohort of intakes admitted to the new Higher Diploma in Electronic and Information Engineering programme. Just in case any updated information is necessary after the publication of this booklet, students are requested to refer to the URL “http://www.eie.polyu.edu.hk/prog/hd_new.html” for the most updated information. Should there be any discrepancy between the contents of this booklet and University regulations, University regulations always prevail.

1.2 Programme Information

<table>
<thead>
<tr>
<th>Title of Programme</th>
<th>Higher Diploma in Electronic and Information Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host Department</td>
<td>Department of Electronic and Information Engineering</td>
</tr>
<tr>
<td>Mode of Attendance</td>
<td>Full-time (predominantly in the daytime)</td>
</tr>
<tr>
<td>Duration</td>
<td>Normally 2 years, maximum 4 years</td>
</tr>
<tr>
<td>Programme Structure</td>
<td>Credit-based</td>
</tr>
<tr>
<td>Final Award</td>
<td>Higher Diploma in Electronic and Information Engineering</td>
</tr>
<tr>
<td></td>
<td>電子及資訊工程學高級文憑</td>
</tr>
</tbody>
</table>

### Total Credits for Graduation (Academic Credits + Training Credits)

- **Academic Credits:**
  - HKDSE Student who have Level 2 or above in HKDSE Physics/Combined Science with Physics and Mathematics Module 1 or 2: 63 credits
  - HKDSE Students who have Level 2 or above in HKDSE Mathematics Module 1 or 2 but do not have Level 2 or above in HKDSE Physics/Combined Science with Physics: 66 credits
  - HKDSE Students who have Level 2 or above in HKDSE Physics/Combined Science with Physics but do not have Level 2 or above in HKDSE Mathematics Module 1 or 2: 67 credits
  - HKDSE Students who do not have Level 2 or above in HKDSE Physics/Combined Science with Physics and Mathematics Module 1 or 2: 70 credits
- **Training Credits:** 5 credits
2. RATIONALE AND AIMS OF THE PROGRAMME

2.1 Background and Rationale

Electronic and information engineering are among the key technologies that play important roles in daily living. Various sectors, such as business, commerce, communication, education, entertainment, healthcare and transportation require electronic and information engineering for smooth operation. Hence, it is envisioned that there is a great need of professionals who possess knowledge in the areas of electronic and information engineering, as well as generic skills of problem solving, innovation, analysis and adaptability to contribute to the technological and economic development in the region and in the world.

2.2 Aims

This programme aims at producing graduates with the professional knowledge and skills that are relevant for a professional technologist in the field of electronic and information engineering. This programme is designed to equip students with background knowledge necessary to start their careers as technologists in the electronic and information engineering discipline upon graduation.

3. INTENDED LEARNING OUTCOMES OF THE PROGRAMME

On successful completion of the programme, students will be able to:

Category A Professional/academic knowledge and skills
1. understand the fundamentals of science and engineering, and have the ability to apply them;
2. conduct experiments, as well as to evaluate the outcomes;
3. analyse and evaluate a system, component or process of given specifications and constraints;
4. identify, formulate and solve problems relevant to EIE;
5. have the ability to use modern engineering/IT tools appropriate to EIE practice;

Category B Attributes for all-roundedness
6. work with others collaboratively in a team and have a knowledge of leadership;
7. recognize professional responsibility;
8. communicate effectively;
9. recognize the need for life-long learning; and
10. participate in creative activities.
4. ENTRANCE REQUIREMENTS

Candidates should satisfy both the general minimum entrance requirements of The Hong Kong Polytechnic University AND the programme-specific requirements for 2-year Full-time Higher Diploma Programme as set out below.

4.1 University General Minimum Entrance Requirements

(i) For those applying on the basis of HKDSE:

- Level 2 in 5 HKDSE subjects including English and Chinese

(ii) For those applying on the basis of other local qualifications:

- An appropriate Diploma or Higher Certificate (as specified in section 4.2 below) from The Hong Kong Polytechnic University or the Hong Kong Institute of Vocational Education (IVE) – or the former Technical Institutes (TI) or Hong Kong Polytechnic/Technical College

(iii) Other local/non-local qualifications deemed to be acceptable equivalents for admission purpose

- The University accepts attainments in HKALE / HKASLE, GCEALE / GCEASLE and IB for admission to its 2-year HD programmes. Applicants holding A-Level and IB qualifications might be granted credit transfer upon admission.
- The University will consider other qualifications, on their individual merits, as being equivalent to the specified entrance requirements. Applicants concerned may be required to attend interviews or tests to further ascertain their language proficiency.

(iv) The public examination results required for admission purpose may be accumulated through multiple sittings.

4.2 Programme-specific Minimum Entrance Requirements

(i) For those applying on the basis of HKDSE:

The following subjects are preferred:

- Level 2 in Mathematics; AND
- Level 2 in Physics, Biology, Chemistry, Combined Science or Information and Communication Technology.
(ii) For those applying on the basis of other qualifications:

- A Higher Certificate in Electronic Engineering, Electrical Engineering, Electronic and Communications Engineering, Computer and Information Engineering, or a related discipline; OR
- A Diploma in Electronic and Communications Engineering, Computer and Information Engineering, or a related discipline.
5. PROGRAMME, SUBJECTS, AND CREDITS

Most of the subjects in the programme are of the standard credit value of 3 credits each. The programme includes Level 1, Level 2 and Level 3 subjects. (‘Level’ of a subject indicates the intellectual demand placed upon students.)

5.1 A summary of the subjects in the programme is shown in the following table. The subjects offered will be updated from time to time according to the trend of the society and the profession.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Status</th>
<th>Level</th>
<th>Credits</th>
<th>Pre-requisite</th>
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</thead>
<tbody>
<tr>
<td>General University Requirements (GUR)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Cluster Areas Requirement (CAR) I #</td>
<td>COM</td>
<td>-</td>
<td>3</td>
<td>Nil</td>
</tr>
<tr>
<td>Cluster Areas Requirement (CAR) II #</td>
<td>COM</td>
<td>-</td>
<td>3</td>
<td>Nil</td>
</tr>
<tr>
<td>HD Language and Communication Requirement (HDLCR) / Language and Communication Requirement (LCR) I – English *</td>
<td>COM</td>
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<tr>
<td>HD Language and Communication Requirement (HDLCR) / Language and Communication Requirement (LCR) II – English *</td>
<td>COM</td>
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<td>HD Language and Communication Requirement (HDLCR) / Language and Communication Requirement (LCR) III – Chinese *</td>
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<td>Discipline-Specific Requirements (DSR)</td>
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<tr>
<td>AMA1100 Basic Mathematics - an Introduction to Algebra and Differential Calculus</td>
<td>COM(1)</td>
<td>1</td>
<td>2</td>
<td>Nil</td>
</tr>
<tr>
<td>AMA1101 Calculus I</td>
<td>COM(2)</td>
<td>1</td>
<td>4</td>
<td>NSS Mathematics plus Module I or Module II</td>
</tr>
<tr>
<td>AMA1102 Calculus IA</td>
<td></td>
<td>1</td>
<td>4</td>
<td>AMA1100</td>
</tr>
<tr>
<td>AMA1103 Introductory Linear Algebra</td>
<td>COM(3)</td>
<td>1</td>
<td>2</td>
<td>NSS Mathematics (Exclusion: NSS Mathematics Module II)</td>
</tr>
<tr>
<td>AMA1104 Introductory Probability</td>
<td></td>
<td>1</td>
<td>2</td>
<td>NSS Mathematics (Exclusion: NSS Mathematics Module I)</td>
</tr>
<tr>
<td>AMA2111 Mathematics I</td>
<td>COM</td>
<td>2</td>
<td>3</td>
<td>AMA1101 or AMA1002</td>
</tr>
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<td>AP00003 Foundation Physics II</td>
<td>COM(4)</td>
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<td>3</td>
<td>Nil</td>
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<tr>
<td>AP10009 University Physics II</td>
<td>COM</td>
<td>1</td>
<td>3</td>
<td>Nil</td>
</tr>
<tr>
<td>EIE2101 Basic Circuit Analysis</td>
<td>COM</td>
<td>2</td>
<td>3</td>
<td>Nil</td>
</tr>
<tr>
<td>Subject</td>
<td>Status</td>
<td>Level</td>
<td>Credits</td>
<td>Pre-requisite</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>--------</td>
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<td>---------</td>
<td>---------------</td>
</tr>
<tr>
<td>EIE2103 Basic Electronics</td>
<td>ELE</td>
<td>2</td>
<td>3</td>
<td>EIE2101</td>
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<td>EIE2261 Logic Design</td>
<td>COM</td>
<td>2</td>
<td>3</td>
<td>Nil</td>
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<td>EIE2264 Computer Programming</td>
<td>COM</td>
<td>2</td>
<td>3</td>
<td>Nil</td>
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<td>EIE2282 Information Technology</td>
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<td>3</td>
<td>Nil</td>
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<tr>
<td>EIE3106 Integrated Project</td>
<td>COM</td>
<td>3</td>
<td>3</td>
<td>Nil</td>
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<tr>
<td>EIE3114 Database System</td>
<td>COM</td>
<td>3</td>
<td>3</td>
<td>Nil</td>
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<td>EIE3361 Computer System Fundamentals</td>
<td>COM</td>
<td>3</td>
<td>3</td>
<td>EIE3373</td>
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<tr>
<td>EIE3362 Linear Systems</td>
<td>ELE</td>
<td>3</td>
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<td>AMA2111</td>
</tr>
<tr>
<td>EIE3373 Microcontroller Systems and Interface</td>
<td>COM</td>
<td>3</td>
<td>3</td>
<td>EIE2261</td>
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<tr>
<td>EIE3375 Object Oriented Design and Programming</td>
<td>ELE</td>
<td>3</td>
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<td>EIE2264</td>
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<tr>
<td>EIE3381 Communication Fundamentals</td>
<td>COM</td>
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<td>3</td>
<td>Co-requisite: AMA2111</td>
</tr>
<tr>
<td>EIE3399 Data Communications</td>
<td>ELE</td>
<td>3</td>
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<tr>
<td>IC2111 Industrial Centre Training I for EIE</td>
<td>TRN</td>
<td>2</td>
<td>5</td>
<td>Nil</td>
</tr>
</tbody>
</table>

Note:

- **COM** Compulsory
- **ELE** Elective
- **TRN** Training

* Details of the HD Language and Communication Requirement (HDLCR)/ Language and Communication Requirement (LCR) are set out in Section 5.3.

# Cluster Areas Requirement (CAR) I and Cluster Areas Requirement (CAR) II should be from two different cluster areas, and one of which (3 credits) should be in subjects designated as "China-related" (China Study Requirement).

1. For students who do not have Level 2 or above in HKDSE Mathematics Module 1 or 2 only.
2. Students who have Level 2 or above in HKDSE Mathematics Module 1 or 2, select AMA1101; students who do not have Level 2 or above in HKDSE Mathematics Module 1 or 2, select AMA1102.
3. Students who have Level 2 or above in HKDSE Mathematics Module 1, select AMA1103; students who have Level 2 or above in HKDSE Mathematics Module 2, select AMA1104; students who do not have Level 2 or above in HKDSE Mathematics Module 1 or 2, select both AMA1103 and AMA1104.
4. For students who do not have Level 2 or above in HKDSE Physics/ Combined Science with Physics only.
5.2 Specified Progression Pattern

In order to be eligible for the award, students have to accumulate at least 63 academic credits (excluding the training credits from practical training), pass all compulsory subjects and practical training in the Industrial Centre (IC2111).

Students are normally expected to follow the specified progression pattern for discipline-specific subjects. Approval from the Department is required if students do not wish to follow the specified pattern. All compulsory discipline-specific subjects are non-deferrable.

5.2.1 HKDSE Students with Level 2 or above in HKDSE Physics/ Combined Science with Physics and Mathematics Module I or II

<table>
<thead>
<tr>
<th>Semester</th>
<th>Subject</th>
<th>Credits</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1 Semester 1</td>
<td>HDLCR/ LCR I – English</td>
<td>3</td>
<td>LCR</td>
</tr>
<tr>
<td></td>
<td>AMA1101 Calculus I</td>
<td>4</td>
<td>DSR</td>
</tr>
<tr>
<td></td>
<td>CAR I*</td>
<td>3</td>
<td>CAR</td>
</tr>
<tr>
<td></td>
<td>AP10009 University Physics II</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td></td>
<td>EIE2264 Computer Programming</td>
<td>1.5</td>
<td>DSR</td>
</tr>
<tr>
<td></td>
<td>IC2111 Industrial Centre Training I for EIE</td>
<td>5</td>
<td>DSR (training)</td>
</tr>
<tr>
<td>Year 1 Semester 2</td>
<td>HDLCR/ LCR II – English</td>
<td>3</td>
<td>LCR</td>
</tr>
<tr>
<td></td>
<td>AMA1104 Introductory Probability / AMA1103 Introductory Linear Algebra</td>
<td>2</td>
<td>DSR</td>
</tr>
<tr>
<td></td>
<td>EIE2264 Computer Programming (Continued)</td>
<td>1.5</td>
<td>DSR</td>
</tr>
<tr>
<td></td>
<td>EIE2282 Information Technology</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td></td>
<td>CAR II*</td>
<td>3</td>
<td>CAR</td>
</tr>
<tr>
<td></td>
<td>IC2111 Industrial Centre Training I for EIE (Continued)</td>
<td>-</td>
<td>DSR (training)</td>
</tr>
<tr>
<td>Year 1 Summer</td>
<td>IC2111 Industrial Centre Training I for EIE (Continued)</td>
<td>-</td>
<td>DSR (training)</td>
</tr>
<tr>
<td></td>
<td>EIE2101 Basic Circuit Analysis</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td></td>
<td>EIE2261 Logic Design</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td>Year 2 Semester 1</td>
<td>AMA2111 Mathematics I</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td></td>
<td>HDLCR/ LCR III – Chinese</td>
<td>3</td>
<td>LCR</td>
</tr>
<tr>
<td></td>
<td>EIE3114 Database System</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td></td>
<td>EIE3373 Microcontroller Systems and Interface</td>
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<td>DSR</td>
</tr>
<tr>
<td></td>
<td>EIE3381 Communication Fundamentals</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td>Year 2 Semester 2</td>
<td>EIE3106 Integrated Project</td>
<td>3</td>
<td>DSR</td>
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<td>EIE3361 Computer System Fundamentals</td>
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<td>DSR</td>
</tr>
<tr>
<td></td>
<td>Elective 1</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
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<td>Elective 2</td>
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<td>DSR</td>
</tr>
<tr>
<td></td>
<td>Elective 3</td>
<td>3</td>
<td>DSR</td>
</tr>
</tbody>
</table>

* The study pattern for GUR subjects is indicative only. Students may take these subjects according to their own schedule.
### 5.2.2 HKDSE Students with Level 2 or above in HKDSE Mathematics Module I or II but without Level 2 or above in HKDSE Physics/Combined Science with Physics

<table>
<thead>
<tr>
<th>Semester</th>
<th>Subject</th>
<th>Credits</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Semester 1</strong></td>
<td>AP00003 Foundation Physics II</td>
<td>3</td>
<td>DSR (Add.)</td>
</tr>
<tr>
<td></td>
<td>HDLCR/LCR I – English</td>
<td>3</td>
<td>LCR</td>
</tr>
<tr>
<td></td>
<td>AMA1101 Calculus I</td>
<td>4</td>
<td>DSR</td>
</tr>
<tr>
<td></td>
<td>CAR I*</td>
<td>3</td>
<td>CAR</td>
</tr>
<tr>
<td></td>
<td>EIE2264 Computer Programming</td>
<td>1.5</td>
<td>DSR</td>
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<tr>
<td></td>
<td>IC2111 Industrial Centre Training I for EIE</td>
<td>5</td>
<td>DSR (training)</td>
</tr>
<tr>
<td><strong>Semester 2</strong></td>
<td>HDLCR/LCR II – English</td>
<td>3</td>
<td>LCR</td>
</tr>
<tr>
<td></td>
<td>AMA1104 Introductory Probability /AMA1103 Introductory Linear Algebra</td>
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<td>DSR</td>
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<tr>
<td></td>
<td>AP10009 University Physics II</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td></td>
<td>EIE2264 Computer Programming (Continued)</td>
<td>1.5</td>
<td>DSR</td>
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<tr>
<td></td>
<td>EIE2282 Information Technology</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td></td>
<td>CAR II*</td>
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<td>CAR</td>
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<td></td>
<td>IC2111 Industrial Centre Training I for EIE (Continued)</td>
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<td>DSR (training)</td>
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<td><strong>Summer</strong></td>
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<td>DSR (training)</td>
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<td>EIE2101 Basic Circuit Analysis</td>
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<td>EIE2261 Logic Design</td>
<td>3</td>
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<td><strong>Year 2</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Semester 1</strong></td>
<td>AMA2111 Mathematics I</td>
<td>3</td>
<td>DSR</td>
</tr>
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<td>HDLCR/LCR III – Chinese</td>
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<td>LCR</td>
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<td>EIE3114 Database System</td>
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<td>DSR</td>
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<td>EIE3381 Communication Fundamentals</td>
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<td>DSR</td>
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<td><strong>Semester 2</strong></td>
<td>EIE3106 Integrated Project</td>
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<tr>
<td></td>
<td>Elective 3</td>
<td>3</td>
<td>DSR</td>
</tr>
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</table>

* The study pattern for GUR subjects is indicative only. Students may take these subjects according to their own schedule.
5.2.3 HKDSE Students with Level 2 or above in HKDSE Physics/ Combined Science with Physics but without Level 2 or above in HKDSE Mathematics Module I or II

<table>
<thead>
<tr>
<th>Semester</th>
<th>Subject</th>
<th>Credits</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>AMA1100 Basic Mathematics - an Introduction to Algebra and Differential Calculus</td>
<td>2</td>
<td>DSR (Add.)</td>
</tr>
<tr>
<td>Year 1</td>
<td>AMA1103 Introductory Linear Algebra</td>
<td>2</td>
<td>DSR</td>
</tr>
<tr>
<td>Year 1</td>
<td>HDLCR/ LCR I – English</td>
<td>3</td>
<td>LCR</td>
</tr>
<tr>
<td>Year 1</td>
<td>CAR I*</td>
<td>3</td>
<td>CAR</td>
</tr>
<tr>
<td>Year 1</td>
<td>CAR II*</td>
<td>3</td>
<td>CAR</td>
</tr>
<tr>
<td>Year 1</td>
<td>EIE2264 Computer Programming</td>
<td>1.5</td>
<td>DSR</td>
</tr>
<tr>
<td>Year 1</td>
<td>IC2111 Industrial Centre Training I for EIE</td>
<td>5</td>
<td>DSR (training)</td>
</tr>
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<td>Year 2</td>
<td>HDLCR/ LCR II – English</td>
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<td>LCR</td>
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<td>Year 2</td>
<td>AMA1102 Calculus IA</td>
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<td>Year 2</td>
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<td>DSR (training)</td>
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<tr>
<td>Year 1</td>
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</tr>
<tr>
<td>Year 1</td>
<td>EIE2261 Logic Design</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td>Year 2</td>
<td>AMA2111 Mathematics I</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td>Year 2</td>
<td>HDLCR/ LCR III – Chinese</td>
<td>3</td>
<td>LCR</td>
</tr>
<tr>
<td>Year 2</td>
<td>EIE3114 Database System</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td>Year 2</td>
<td>EIE3373 Microcontroller Systems and Interface</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td>Year 2</td>
<td>EIE3381 Communication Fundamentals</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td>Year 2</td>
<td>EIE3106 Integrated Project</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td>Year 2</td>
<td>EIE3361 Computer System Fundamentals</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td>Year 2</td>
<td>Elective 1</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td>Year 2</td>
<td>Elective 2</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td>Year 2</td>
<td>Elective 3</td>
<td>3</td>
<td>DSR</td>
</tr>
</tbody>
</table>

* The study pattern for GUR subjects is indicative only. Students may take these subjects according to their own schedule.
5.2.4 HKDSE Students without Level 2 or above in HKDSE Physics/ Combined Science with Physics and Mathematics Module I or II

<table>
<thead>
<tr>
<th>Semester</th>
<th>Subject</th>
<th>Credits</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semester 1</td>
<td>AP00003 Foundation Physics II</td>
<td>3</td>
<td>DSR (Add.)</td>
</tr>
<tr>
<td>(14.5 credits +</td>
<td>AMA1100 Basic Mathematics - an Introduction to Algebra and</td>
<td>2</td>
<td>DSR (Add.)</td>
</tr>
<tr>
<td>training credits)</td>
<td>Differential Calculus</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AMA1103 Introductory Linear Algebra</td>
<td>2</td>
<td>DSR</td>
</tr>
<tr>
<td></td>
<td>HDLCR/ LCR I – English</td>
<td>3</td>
<td>LCR</td>
</tr>
<tr>
<td></td>
<td>CAR I*</td>
<td>3</td>
<td>CAR</td>
</tr>
<tr>
<td></td>
<td>EIE2264 Computer Programming</td>
<td>1.5</td>
<td>DSR</td>
</tr>
<tr>
<td></td>
<td>IC2111 Industrial Centre Training I for EIE</td>
<td>5</td>
<td>DSR (training)</td>
</tr>
<tr>
<td>Year 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semester 2</td>
<td>HDLCR/ LCR II – English</td>
<td>3</td>
<td>LCR</td>
</tr>
<tr>
<td>(16.5 credits +</td>
<td>AMA1102 Calculus IA</td>
<td>4</td>
<td>DSR</td>
</tr>
<tr>
<td>training credits)</td>
<td>AMA1104 Introductory Probability</td>
<td>2</td>
<td>DSR (Add.)</td>
</tr>
<tr>
<td></td>
<td>AP10009 University Physics II</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td></td>
<td>EIE2264 Computer Programming (Continued)</td>
<td>1.5</td>
<td>DSR</td>
</tr>
<tr>
<td></td>
<td>EIE2282 Information Technology</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td></td>
<td>IC2111 Industrial Centre Training I for EIE (Continued)</td>
<td>-</td>
<td>DSR (training)</td>
</tr>
<tr>
<td>Year 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer</td>
<td>IC2111 Industrial Centre Training I for EIE (Continued)</td>
<td>-</td>
<td>DSR (training)</td>
</tr>
<tr>
<td>(6 credits +</td>
<td>EIE2101 Basic Circuit Analysis</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td>training credits)</td>
<td>EIE2261 Logic Design</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td>Year 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semester 1</td>
<td>AMA2111 Mathematics I</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td>(18 credits)</td>
<td>HDLCR/ LCR III – Chinese</td>
<td>3</td>
<td>LCR</td>
</tr>
<tr>
<td></td>
<td>CAR II*</td>
<td>3</td>
<td>CAR</td>
</tr>
<tr>
<td></td>
<td>EIE3114 Database System</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td></td>
<td>EIE3373 Microcontroller Systems and Interface</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td></td>
<td>EIE3381 Communication Fundamentals</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td>Year 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semester 2</td>
<td>EIE3106 Integrated Project</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td>(15 credits)</td>
<td>EIE3361 Computer System Fundamentals</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td></td>
<td>Elective 1</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td></td>
<td>Elective 2</td>
<td>3</td>
<td>DSR</td>
</tr>
<tr>
<td></td>
<td>Elective 3</td>
<td>3</td>
<td>DSR</td>
</tr>
</tbody>
</table>

* The study pattern for GUR subjects is indicative only. Students may take these subjects according to their own schedule.
5.3 Language and Communication Requirements for Higher Diploma Programme (HDLCR)

Students are required to fulfil the Language and Communication Requirements for Higher Diploma Programmes (HDLCR) in English (6 credits) and Chinese (3 credits) as stated below in order to be eligible for graduation:

5.3.1 HDLCR – English

All Higher Diploma students must successfully complete two 3-credit English language subjects as stipulated by the University (Table 1). These subjects are designed to suit students’ different levels of English language proficiency at entry, as determined by their HKDSE score or the equivalent or the English Language Centre (ELC) entry assessment.

Students who can demonstrate that they have achieved a level beyond that of the LCR proficient level subjects as listed in Table 2 (based on an assessment by ELC) may apply for subject exemption or credit transfer of the LCR subject or subjects concerned.

Table 1: Framework of English LCR subjects

<table>
<thead>
<tr>
<th>HKDSE</th>
<th>Subject 1</th>
<th>Subject 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 5 or equivalent</td>
<td>Advanced English for University Studies (ELC1014) 3 credits</td>
<td>Any LCR Proficient level subject in English (see Table 2) 3 credits</td>
</tr>
<tr>
<td>Level 4 or equivalent</td>
<td>English for University Studies (ELC1013) 3 credits</td>
<td>Advanced English for University Studies (ELC1014) 3 credits</td>
</tr>
<tr>
<td>Level 3 or equivalent</td>
<td>Practical English for University Studies (ELC1011) 3 credits</td>
<td>English for University Studies (ELC1013) 3 credits</td>
</tr>
<tr>
<td>Level 2 or equivalent</td>
<td>University English for Higher Diploma Students I (ELC1007) 3 credits</td>
<td>University English for Higher Diploma Students II (ELC1008) 3 credits</td>
</tr>
</tbody>
</table>

Table 2: LCR Proficient level subjects in English

<table>
<thead>
<tr>
<th>For students entering with HKDSE Level 5, or at an equivalent level or above</th>
<th>Advanced English Reading and Writing Skills (ELC2011) 3 credits each</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Persuasive Communication (ELC2012)</td>
</tr>
<tr>
<td></td>
<td>English in Literature and Film (ELC2013)</td>
</tr>
</tbody>
</table>
5.3.2 HDLCR – Chinese

All Higher Diploma students must successfully complete one 3-credit Chinese language subjects as stipulated by the University (Table 3). These subjects are designed to suit students’ different levels of Chinese language proficiency at entry, as determined by their HKDSE score or the equivalent or the Chinese Language Centre (CLC) entry assessment.

Table 3: Framework of Chinese LCR subjects

<table>
<thead>
<tr>
<th>HKDSE/HKALE</th>
<th>Required Subject</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HKDSE Level 4, 5 or equivalent, or HKALE Grade A, B, C</td>
<td>CBS1102P Advanced Communication Skills in Chinese (ACSC)</td>
<td>3 credits</td>
</tr>
<tr>
<td>HKDSE Level 3 (with no sub-score below Level 3) or equivalent, or HKALE Grade D, E (with no component below E)</td>
<td>CBS1101P Fundamentals of Chinese Communication (FCC)</td>
<td>3 credits</td>
</tr>
<tr>
<td>HKDSE Level 2 or equivalent</td>
<td>CBS1103P Fundamentals of Chinese Communication for Higher Diploma Students</td>
<td>3 credits</td>
</tr>
</tbody>
</table>

5.4 Practical Training

Industrial Centre (IC) Training is a practical training element in this curriculum to provide a chance for the students to develop hands-on experience in various engineering domains in order to prepare for a career in the engineering profession.

Students must pass the IC Training subject in order to be considered for the HD in Electronic and Information Engineering award. IC Training is graded in the normal manner from A+ to F and will be counted in the evaluation of the Grade Point Average (GPA). However, they will not be counted towards Weighted GPA or Award GPA. The assessment method of Industrial Centre Training is based on 100% continuous assessment. The assessment components are workshop reports, competency in practical works, and appreciation tests. To complete the IC Training successfully, students must demonstrate good professional attributes including responsible attitude in training, excellent attendance with active learning, exercising best practice and care in equipment and tools while observing all safety codes. Detail of assessment scheme is available from Industrial Centre.
6. DEPARTMENTAL UNDERGRADUATE PROGRAMME COMMITTEE

6.1 The composition of the Departmental Undergraduate Programme Committee (DUPC) is decided by the Head of Department. Normally, the DUPC consists of Programme Leaders of all degree and higher diploma programmes hosted by the Department, Head of Department, representative from the Departmental Learning and Teaching Committee, teaching staff representatives, representatives from major serving departments and student representatives. The Committee is responsible for programme review and development.

6.2 The DUPC will collect and consider, on a regular basis, the views of students and other key stakeholders on the relevance and currency of the syllabi, the standards of the examinations, the development of the programme, the adequacy of resources and the local and worldwide trends related to learning and teaching, for the continuous improvement of the programme.

7. STUDENT STATUS

7.1 Students' eligibility for the range of services provided by the University will be governed by the students' status, which is determined with reference to the mode of attendance of the programmes enrolled and/or the study load as described in Sections 7.2 to 7.5 below.

Full-time students:

7.2 Students enrolling on this programme, which is classified as full-time/sandwich, with a study load of 9 credits or more in a semester, are classified as full-time students. Students who wish to change their study load to less than 9 credits in a semester will have to seek prior approval from their Department. Students who have been given permission to take less than 9 credits in a semester will be given the option to pay by credit fees. If students wish to exercise such option, they have to inform the Department before the end of the add/drop period of that semester.

7.3 Full-time local students enrolled on UGC-funded programmes are eligible to apply for financial assistance from the Government in the form of grant and loan. Government grant and loan may not be granted beyond the normal period of study for the programme.
Self-paced students:

7.4 Students who wish to study at their own pace instead of following the specified progression pattern will have to seek prior approval from their Department. These students are referred to as self-paced students.

Subject-based students:

7.5 Students who wish to take individual subjects, but do not wish to register as a candidate for an award, are classified as subject-based students.

8. SUBJECT REGISTRATION AND WITHDRAWAL

8.1 In addition to programme registration, students need to register for subjects at specified periods prior to the commencement of a semester. An add/drop period will also be scheduled for each semester. Students may apply for withdrawal of their registration on a subject after the add / drop period, if they have a genuine need to do so. The application should be made to the relevant programme offering Department and will require the approval of both the subject lecturer and the host Department Programme Leader concerned (or an alternate academic staff authorised by the programme offering Department). Applications submitted after the commencement of the examination period will not be considered. Once the application of subject withdrawal is approved, the tuition fee paid for the subject will be forfeited and the withdrawal status of the subject will be shown in the examination result notification and transcript of studies, but will not be counted in the calculation of the GPA.

8.2 The pre-requisite requirements of a subject must have been fulfilled before a student registers for that subject. However, the subject offering Department has the discretion to waive the pre-requisite requirements of a subject, if deemed appropriate. If the pre-requisite subject concerned forms part of the requirements for award, the subject has to be passed in order to satisfy the graduation requirements for the programme concerned, despite the waiving of the pre-requisite.

8.3 Students will be allowed to take additional subjects for the following semester for broadening purpose, after they fulfil the graduation requirements. However, they will still be subject to the maximum study load of 21 credits per semester and the availability of places in the subjects concerned, and their enrolment will be as subject-based students only.
9. STUDY LOAD

9.1 For students following the progression pattern specified for their programme, they have to take the number of credits and subjects, as specified in the Programme Booklet, for each semester. Students cannot drop those subjects assigned by the department unless prior approval has been given by the department.

9.2 The normal study load is 15 credits in a semester. The maximum study load to be taken by a student in a semester is 21 credits, unless exceptional approval is given by the Head of the programme offering Department. For such cases, students should be reminded that the study load approved should not be taken as grounds for academic appeal.

9.3 Students are not allowed to take zero subject in any semester, including the mandatory summer term as required by some programmes, unless they have obtained prior approval from the programme offering Department; otherwise they will be classified as having unofficially withdrawn from their programme. Students who have been approved for zero subject enrolment (i.e. taking zero subject in a semester) are allowed to retain their student status and continue using campus facilities and library facilities. Any semester in which the students are allowed to take zero subject will nevertheless be counted towards the maximum period of registration.

9.4 Students who have obtained approval to pace their studies and students on programmes without any specified progression pattern who wish to take more than the normal load of 15 credits in a semester should seek advice from the Department concerned before the selection of subjects.

10. SUBJECT EXEMPTION

Students may be exempted from taking any specified subjects, including mandatory General University Requirements (GUR) subjects, if they have successfully completed similar subjects previously in another programme or have demonstrated the level of proficiency/ability to the satisfaction of the subject offering department. Subject exemption is normally decided by the subject offering department. However, for applications which are submitted by students who have completed an approved student exchange programme, the subject exemption is to be decided by the programme offering department in consultation with the subject offering departments. In case of disagreement between the programme offering department and the subject offering department, the two Faculty Deans/School Board Chairmen concerned will make a final decision jointly on the application. If students are exempted from taking a specified subject, the credits associated with the exempted subject will not be counted towards the award requirements (except for exemptions
It will therefore be necessary for the students to consult the programme offering department and take another subject in order to satisfy the credit requirement for the award.

11. CREDIT TRANSFER

11.1 Students may be given credits for recognised previous studies (including mandatory General University Requirements (GUR) subjects; and the credits will be counted towards meeting the requirements for award. Transferred credits may be counted towards more than one award. The granting of credit transfer is a matter of academic judgment. In assessing the transferability of subjects previously taken, the syllabus of that subject should be carefully scrutinized to ascertain that it is comparable to the PolyU’s curriculum. Whether the previous studies are from institutions on credit-based or non-credit-based system should not be a matter of concern, and the subject size need not be a perfect match. To ascertain the academic standing of the institution offering the previous studies, the Department might need to request the institutions concerned to provide more relevant information.

11.2 Credit transfer may be done with or without the grade being carried over; the former should normally be used when the credits were gained from PolyU. Credit transfer with the grade being carried over may be granted for subjects taken from outside the University, if deemed appropriate, and with due consideration to the academic equivalence of the subjects concerned and the comparability of the grading systems adopted by the University and the other approved institutions. Subject credit transfer is normally decided by the subject offering Department. However, for applications which are submitted by students who have completed an approved student exchange programme, the decision will be made by the programme offering Department in consultation with the subject offering Departments. As the application for credit transfer may involve subjects offered by more than one Department, the programme offering Department should coordinate and check whether the maximum limit for credit transfer for a student has been exceeded, and whether the student has fulfilled the residential requirement of the University.

11.3 In case of disagreement between the programme offering Department and the subject offering Department, the two Faculty Deans/School Board Chairmen concerned will make a final decision jointly on the application. The validity period of credits previously earned is 8 years after the year of attainment.

11.4 Normally, not more than 50% of the credit requirement for award may be transferable from approved institutions outside the University. For transfer of credits from programmes...
offered by PolyU, normally not more than 67% of the credit requirement for award can be transferred. In cases where both types of credits are being transferred (i.e. from programmes offered by PolyU and from approved institutions outside the University), not more than 50% of the credit requirement for award may be transferred.

11.5 If the transferred credits are for a PolyU programme which is accredited by a professional body, the Department concerned should ensure that the transferred credits will also meet the requirement of the relevant professional body.

11.6 If a student is waived from a particular stage of study on the basis of advanced qualifications held at the time of admission, the student concerned will be required to complete fewer credits for award. For these students, the exempted credits will be counted towards the maximum limit for credit transfer when students apply for further credit transfer after their admission.

11.7 Notwithstanding the upper limits stipulated in Section 11.4 above, (and unless professional bodies stipulate otherwise) students may be given more credit transfer than these upper limits (e.g. upon completion of an exchange programme as mentioned in Section 11.8 below), subject to their satisfying the residential requirement.

11.8 Credit transfer can be applicable to credits earned by students through studying at an overseas institution under an approved exchange programme. Students should, before they go abroad for the exchange programme, seek prior approval from the programme offering Department (who will consult the subject offering Departments as appropriate) on their study plan and credit transferability. As with all other credit transfer applications, the Departments concerned should scrutinise the syllabuses of the subjects which the students are going to take at the overseas institution, and determine their credit transferability based on academic equivalence with the corresponding subjects on offer at the PolyU, and the comparability of the grading systems adopted by PolyU and the overseas institution. The transferability of credits, and the suitability for allowing grades to be carried over, must be determined and communicated to students before they go abroad for the exchange programme. In order to overcome the problems associated with subject-to-subject mappings, block credit transfer rather than subject-by-subject credit transfer can be given.

11.9 All credit transfers approved will take effect only in the semester for which they are approved. A student who applies for transfer of credits during the re-enrolment or the add/drop period of a particular semester will only be eligible for graduation at the end of that semester, even if the granting of credit transfer will immediately enable the student to satisfy the credit requirement for the award.
12. DEFERMENT OF STUDY

12.1 Students may apply for deferment of study if they have a genuine need to do so such as illness or posting to work outside Hong Kong. Approval from the Department offering the programme is required. The deferment period will not be counted towards the maximum period of registration.

12.2 Application for deferment of study will be entertained only in exceptional circumstances for students who have not yet completed the first year of a full-time or sandwich programme.

12.3 Where the period of deferment of study begins during a stage for which fees have been paid, no refund of such fees will be made.

12.4 Students who have been approved for deferment are not entitled to enjoy any campus facilities during the deferment period.

13. PRINCIPLES OF ASSESSMENT

13.1 Assessment of learning and assessment for learning are both important for assuring the quality of student learning. Assessment of learning is to evaluate whether students have achieved the intended learning outcomes of the subjects that they have taken and have attained the overall learning outcomes of the academic programme at the end of their study at a standard appropriate to the award. Appropriate methods of assessment that align with the intended learning outcomes will be designed for this purpose. The assessment methods will also enable teachers to differentiate students’ different levels of performance within subjects. Assessment for learning is to engage students in productive learning activities through purposefully designed assessment tasks.

13.2 Assessment will also serve as feedback to students. The assessment criteria and standards will be made explicit to students before the start of the assessment to facilitate student learning, and feedback provided will link to the criteria and standards. Timely feedback will be provided to students so that they are aware of their progress and attainment for the purpose of improvement.

13.3 The ultimate authority in the University for the confirmation of academic decisions is the Senate, but for practical reasons, the Senate has delegated to the Faculty/School Boards the authority to confirm the decisions of Boards of Examiners provided these are made within the framework of the General Assessment Regulations. Recommendations from
Board of Examiners which fall outside these Regulations shall be ratified by the Academic Regulations Committee (ARC) and reported to the Senate.

14. ASSESSMENT METHODS

14.1 Students' performance in a subject can be assessed by continuous assessment and/or examination, at the discretion of the individual subject offering Department. Where both continuous assessment and examination are used, the weighting of each in the overall subject grade will be clearly stated in the programme booklet. The subject offering Department can decide whether students are required to pass both the continuous assessment and examination components, or either component only, in order to obtain a subject pass, but this requirement (to pass both, or either components) will be specified in the programme booklet. Learning outcomes should be assessed by continuous assessment and/or examination appropriately, in line with the outcome-based approach.

14.2 Continuous assessment may include tests, assignments, projects, laboratory work, field exercises, presentations and other forms of classroom participation. Continuous Assessment Assignments which involve group work should nevertheless include some individual components therein. The contribution made by each student in continuous assessment involving a group effort shall be determined and assessed separately, and this can result in different grades being awarded to students in the same group.

14.3 Assessment methods and parameters of subjects shall be determined by the subject offering department.

14.4 At the beginning of each semester, the subject teacher will inform students of the details of the methods of assessments to be used within the assessment framework as specified in the programme booklet.

15. SUBJECT RESULTS

15.1 Subject Lecturers have sole responsibilities for marking students' coursework and examination scripts, grading them, finalising the results and informing each student of his/her results, in respect of the subject they teach. In this regard, Subject Lecturers will be accountable to the Head of the subject offering Department to ensure that the scripts are correctly marked and graded, and to avoid administrative errors at all times. To ensure consistency and uniformity for a common subject taught by different Subject Lecturers,
meetings can be arranged amongst them before the examination papers are set or before the marking is done.

15.2 Subject Assessment Review Panel (SARP) may also be formed by the Head of the Department offering the subjects to review and finalise the subject grades for submission to the Board of Examiners. One Subject Assessment Review Panel may be formed to take care of all subjects offered by the Department.

15.3 SARP shall include the Head of the Department offering the subjects (as Chairman), the relevant subject examiners and where appropriate, the programme leader.

16. BOARD OF EXAMINERS (BoE)

16.1 The authority for approving the overall results of students rests with the Board of Examiners (BoE). The BoE will meet at the end of each semester (except for Summer Term unless there are students who are eligible to graduate after the completion of Summer Term subjects) and is responsible to the Senate for making:

(i) a decision on the classification of awards to be granted to each student on completion of the programme;
(ii) a decision on deregistration cases; and
(iii) a decision on cases with extenuating circumstance.

16.2 These decisions are made by the full BoE at the end of each semester in the light of the standard of student achievement appropriate to the award to which the programme is designed to lead, the aims of the programme, the performance on the programme in previous years, the general assessment regulations of the University and the specific programme regulations, and good practice established in the University and elsewhere.

16.3 The BoE will not attempt to change the grades for any student in any subject nor condone failures. The decisions of the BoE, except those on award and deregistration cases which are straightforward, will be ratified by the Faculty Board. The Faculty Board may refer the decisions back to the BoE for further consideration and explanation.

16.4 Any decisions by the BoE outside the general assessment regulations of the University, supported by the Faculty Board, shall be referred to the the Academic Regulations Committee for ratification. All such cases shall be reported to the Senate. Decisions by BoE outside the programme regulations but within the general assessment regulations of the University fall within the authority of the Faculty Board.
16.5 Students shall be formally notified of decisions affecting them after the BoE meeting except for those cases which require ratification of the Faculty Board. For the latter cases, students shall be formally notified of decisions after the Faculty Board's ratification or, if a decision is outside the General Assessment Regulations, after the Academic Regulations Committee ratifies that decision. Any prior communication of results to these students shall be subject to formal ratification.

17. PROGRESSION / ACADEMIC PROBATION / DeregISTRATION

17.1 The Board of Examiners shall, at the end of each semester (except for Summer Term unless there are students who are eligible to graduate after completion of Summer Term subjects), determine whether each student is
(i) eligible for progression towards an award; or
(ii) eligible for an award; or
(iii) required to be deregistered from the programme.

17.2 When a student has a Grade Point Average (GPA) (see Section 21.3 below) lower than 2.0, he/she will be put on academic probation in the following semester. If a student is able to pull his/her GPA up to 2.0 or above at the end of that following semester, the status of “academic probation” will be lifted. The status of “academic probation” will be reflected in the examination result notification but not in the transcript of studies.

17.3 A student will have ‘progressing’ status unless he/she falls within any one of the following categories which may be regarded as grounds for deregistration from the programme:
(i) the student has exceeded the maximum period of registration for the programme as specified in this programme booklet; or
(ii) the student’s GPA is lower than 2.0 for two consecutive semesters and his/her Semester GPA in the second semester is also lower than 2.0; or
(iii) the student’s GPA is lower than 2.0 for three consecutive semesters.

17.4 The progression of students to the following academic year will not be affected by the GPA obtained in the Summer Term, unless Summer Term study is mandatory for all students of the programme and constitutes a requirement for graduation, and is so specified in this programme booklet.

17.5 A student may be de-registered from the programme enrolled before the time frame specified in Sections 17.3(ii) or 17.3(iii) above if his/her academic performance is poor to the extent that the Board of Examiners considers that there is not much of a chance for him/her to attain a GPA of 2.0 at the end of the programme.
17.6 Where there are good reasons, the Board of Examiners has the discretion to recommend allowing students who fall into categories as stated in Sections 17.3(ii) or 17.3(iii) above to stay on the programme, and these recommendations should be presented to the relevant Faculty/School Board for final decision.

17.7 Under the current procedures, a student can appeal against the decision of the Board of Examiners to deregister him/her. If such an appeal was upheld by the Department, the recommendation (to reverse the previous decision to deregister the student) will also be presented to the relevant Faculty Board for final decision.

18. **APPEAL AGAINST ASSESSMENT RESULTS**

A student may appeal against a decision of a Subject Assessment Review Panel or the Board of Examiners within 7 working days upon the public announcement of the examination results. The procedures for appeals against examination results are detailed in the Student Handbook.

19. **RETAking OF SUBJECTS**

19.1 Students may retake any subject for the purpose of improving their grade without having to seek approval, but they must retake a compulsory subject which they have failed, i.e. obtained an F grade. Retaking of subjects is with the condition that the maximum study load of 21 credits per semester is not exceeded. Students wishing to retake passed subjects will be accorded a lower priority than those who are required to retake (due to failure in a compulsory subject) and can only do so if places are available.

19.2 The number of retakes of a subject is not restricted. Only the grade obtained in the final attempt of retaking (even if the retake grade is lower than the original grade for an originally passed subject) will be included in the calculation of the Grade Point Average (GPA). If students have passed a subject but failed after retake, credits accumulated for passing the subject in a previous attempt will remain valid for satisfying the credit requirement for award. (The grades obtained in previous attempts will only be reflected in transcript of studies.).

19.3 In cases where a student takes another subject to replace a failed elective subject, the fail grade will be taken into account in the calculation of the GPA, despite the passing of the replacement subject.
20. EXCEPTIONAL CIRCUMSTANCES

Absence from an assessment component

20.1 If a student is unable to complete all the assessment components of a subject, due to illness or other circumstances which are beyond his/her control and considered by the subject offering Department as legitimate, the Department will determine whether the student will have to complete a late assessment and, if so, by what means. This late assessment shall take place at the earliest opportunity, and before the commencement of the following academic year (except that for Summer Term, which may take place within 3 weeks after the finalisation of Summer Term results). If the late assessment cannot be completed before the commencement of the following academic year, the Faculty/School Board Chairman shall decide on an appropriate time for completing the late assessment.

20.2 The student concerned is required to submit his/her application for late assessment in writing to the Head of Department offering the subject, within five working days from the date of the examination, together with any supporting documents. Approval of applications for late assessment and the means for such late assessments shall be given by the Head of Department offering the subject or the Subject Lecturer concerned, in consultation with the Programme Leader.

Aegrotat award

20.3 If a student is unable to complete the requirements of the programme in question for the award due to very serious illness, or other very special circumstances which are beyond his/her control, and considered by the Board of Examiners as legitimate, the Faculty/School Board will determine whether the student will be granted an aegrotat award. Aegrotat award will be granted under very exceptional circumstances.

20.4 A student who has been offered an aegrotat award shall have the right to opt either to accept such an award, or request to be assessed on another occasion to be stipulated by the Board of Examiners; the student’s exercise of this option shall be irrevocable.

20.5 The acceptance of an aegrotat award by a student shall disqualify him/her from any subsequent assessment for the same award.

20.6 An aegrotat award shall normally not be classified, and the award parchment shall not state that it is an aegrotat award. However, the Board of Examiners may determine whether the award should be classified provided that they have adequate information on the students’ academic performance.
Other particular circumstances

20.7 A student’s particular circumstances may influence the procedures for assessment but not the standard of performance expected in assessment.

21. GRADING

21.1 Assessment grades shall be awarded on a criterion-referenced basis. A student's overall performance in a subject (including GUR subjects) shall be graded as follows:

<table>
<thead>
<tr>
<th>Subject grade</th>
<th>Short description</th>
<th>Elaboration on subject grading description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>Exceptionally Outstanding</td>
<td>The student's work is exceptionally outstanding. It exceeds the intended subject learning outcomes in all regards.</td>
</tr>
<tr>
<td>A</td>
<td>Outstanding</td>
<td>The student's work is outstanding. It exceeds the intended subject learning outcomes in nearly all regards.</td>
</tr>
<tr>
<td>B+</td>
<td>Very Good</td>
<td>The student's work is very good. It exceeds the intended subject learning outcomes in most regards.</td>
</tr>
<tr>
<td>B</td>
<td>Good</td>
<td>The student's work is good. It exceeds the intended subject learning outcomes in some regards.</td>
</tr>
<tr>
<td>C+</td>
<td>Wholly Satisfactory</td>
<td>The student's work is wholly satisfactory. It fully meets the intended subject learning outcomes.</td>
</tr>
<tr>
<td>C</td>
<td>Satisfactory</td>
<td>The student's work is satisfactory. It largely meets the intended subject learning outcomes.</td>
</tr>
<tr>
<td>D+</td>
<td>Barely Satisfactory</td>
<td>The student's work is barely satisfactory. It marginally meets the intended subject learning outcomes.</td>
</tr>
<tr>
<td>D</td>
<td>Barely Adequate</td>
<td>The student's work is barely adequate. It meets the intended subject learning outcomes only in some regards.</td>
</tr>
<tr>
<td>F</td>
<td>Inadequate</td>
<td>The student's work is inadequate. It fails to meet many of the intended subject learning outcomes.</td>
</tr>
</tbody>
</table>

‘F’ is a subject failure grade, whilst all others (‘D’ to ‘A+’) are subject passing grades. No credit will be earned if a subject is failed.

21.2 A numeral grade point is assigned to each subject grade, as follows:
21.3 At the end of each semester, a Grade Point Average (GPA) will be computed based on the grade point of all the subjects as follows:

\[
GPA = \frac{\sum_{i=1}^{n} \text{Subject Grade Point} \times \text{Subject Credit Value}}{\sum_{i=1}^{n} \text{Subject Credit Value}}
\]

where \( n \) = number of subjects (inclusive of failed subjects) taken by the student up to and including the latest semester. For subjects which have been retaken, only the grade point obtained in the final attempt will be included in the GPA calculation.

In addition, the following subjects will be excluded from the GPA calculation:

(i) Exempted subjects
(ii) Ungraded subjects
(iii) Incomplete subjects
(iv) Subjects for which credit transfer has been approved, but without any grade assigned
(v) Subjects from which a student has been allowed to withdraw (i.e. those with the code ‘W’)

Subject which has been given an “S” code, i.e. absent from assessment, will be included in the GPA calculation and will be counted as “zero” grade point. GPA is thus the unweighted cumulative average calculated for a student, for all relevant subjects taken.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Grade Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.5</td>
</tr>
<tr>
<td>A</td>
<td>4</td>
</tr>
<tr>
<td>B+</td>
<td>3.5</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
</tr>
<tr>
<td>C+</td>
<td>2.5</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
</tr>
<tr>
<td>D+</td>
<td>1.5</td>
</tr>
<tr>
<td>D</td>
<td>1</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
</tr>
</tbody>
</table>
from the start of the programme to a particular point of time. GPA is an indicator of overall performance, and is capped at 4.0.

21.4 Different types of GPA's

21.4.1 GPA's will be calculated for each Semester including the Summer Term. This Semester GPA will be used to determine students' eligibility to progress to the next Semester alongside with the 'cumulative GPA'. However, the Semester GPA calculated for the Summer Term will not be used for this purpose, unless the Summer Term study is mandatory for all students of the programme concerned and constitutes part of the graduation requirements.

21.4.2 The GPA calculated after the second Semester of the students' study is therefore a 'cumulative' GPA of all the subjects taken so far by students, and without applying any level weighting.

21.4.3 Along with the 'cumulative' GPA, a weighted GPA will also be calculated, to give an indication to the Board of Examiners on the award classification which a student will likely get if he/she makes steady progress on his/her academic studies. GUR subjects will be included in the calculation of weighted GPA for all programmes.

21.4.4 When a student has satisfied the requirements for award, an award GPA will be calculated to determine his/her award classification. GUR subjects will be included in the calculation of award GPA for all programmes.

21.4.5 The relationship between the different types of GPA's, and the methods for calculating each, is further explained in Appendix 1.
22. ELIGIBILITY FOR HIGHER DIPLOMA IN ELECTRONIC AND INFORMATION ENGINEERING AWARD

In order to be eligible for the award, a student must meet:

(i) the University Graduation Requirements, as explained in Section 22.1 below; and

(ii) the specific graduation requirements of their chosen programme of study, as stated in Sections 22.2 below.

22.1 University Graduation Requirements

(i) Satisfy the following requirements in general education (GUR):
   (a) 9 credits of Language and Communication Requirements for Higher Diploma Programmes (HDLCR) as set out in Section 5.3.
   (b) 6 credits of Cluster Areas Requirement (CAR) from two different cluster areas; 3 credits should be in subjects designated as “China-related” (China Studies Requirement).

(ii) Earn a cumulative GPA of 2.0 or above at graduation.

(iii) Satisfy the residential requirement for at least 1/3 of the credits to be completed for the award the student is currently enrolled, unless the professional bodies stipulate otherwise.

22.2 Specific Graduation Requirements for the Higher Diploma in Electronic and Information Engineering Programme

(i) Complete successfully a minimum of 63 academic credits composed of the following:
   (a) 15 credits of General University Requirements (GUR) as set out in Section 22.1(i).
   (b) 48 credits of Discipline-Specific Requirements (DSR).

(ii) Pass the practical training at the Industrial Centre and obtain the 5 training credits.

(iii) In addition to the minimum 63 academic credits, HKDSE students who do not have Level 2 or above in HKDSE Physics/Combined Science with Physics and/or Mathematics Module 1 or 2, are required to study more credits in order to graduate:
   (a) HKDSE Students who have Level 2 or above in HKDSE Mathematics Module 1 or 2 but do not have Level 2 or above in HKDSE Physics/Combined Science with Physics:
63 plus 3 additional credits on Physics: 66 academic credits.

(b) HKDSE students who have Level 2 or above in HKDSE Physics/Combined Science with Physics but do not have Level 2 or above in HKDSE Mathematics Module 1 or 2:
63 plus 4 additional credits on Mathematics: 67 academic credits.

(c) HKDSE Students who do not have Level 2 or above in HKDSE Mathematics Module 1 or 2 and HKDSE Physics/Combined Science with Physics:
63 plus 7 additional credits on Physics and Mathematics: 70 academic credits.

22.3 A student is required to graduate as soon as he/she satisfies all the conditions for award as set out in Sections 22.1 and 22.2 above. The student concerned is required to apply for graduation, in the semester in which he/she is able to fulfil all his/her graduation requirements, and after the add/drop period for that semester has ended.

23. GUIDELINES FOR AWARD CLASSIFICATION

23.1 The guidelines for award classification are stated in the following. In using these guidelines, the Board of Examiners shall exercise its judgement in coming to its conclusions as to the award for each student, and where appropriate, may use other relevant information.

23.2 This programme uses Weighted GPA as a guide for helping to determine award classifications. The weighting given for Level 1 and Level 2 subjects is 2 and the weighting given for Level 3 subjects is 3. The weighting given for Practical Training is zero.

Weighted GPA will be computed as follows:

\[
\text{Weighted GPA} = \frac{\sum \text{Subject Grade Point} \times \text{Subject Credit Value} \times W_i}{\sum \text{Subject Credit Value} \times W_i}
\]

where \(W_i\) = weight assigned according to the level of the subject.
\(n\) = number of subjects counted towards the award as listed in Table 5.1 according to the Specified Progression Pattern (Section 5.2) (inclusive of failed subjects) taken by the student up to and including the latest semester, but for subjects which have been retaken, only
the grade obtained in the final attempt will be included in the GPA calculation except those exclusions specified in Section 23.3.

Same as GPA, Weighted GPA is capped at 4.0.

23.3 Any subjects passed after the graduation requirement has been met will not be taken into account in the grade point calculation for award classification.

23.4 The following are guidelines for the Board for Examiners' reference in determining award classifications:

<table>
<thead>
<tr>
<th>Classification</th>
<th>Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distinction</td>
<td>The student’s performance/attainment is outstanding, and identifies him/her as exceptionally able in the field covered by the programme in question.</td>
</tr>
<tr>
<td>Credit</td>
<td>The student has reached a standard of performance/attainment which is more than satisfactory but less than outstanding.</td>
</tr>
<tr>
<td>Pass</td>
<td>The student has reached a standard of performance/attainment ranging from just adequate to satisfactory.</td>
</tr>
</tbody>
</table>

23.5 The following is a set of indicators, for the Board of Examiners' reference, which can be used in helping to determine award classification:

<table>
<thead>
<tr>
<th>Classification</th>
<th>Weighted GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distinction</td>
<td>3.7(^+) – 4</td>
</tr>
<tr>
<td>Credit</td>
<td>3.2(^+) – 3.7(^-)</td>
</tr>
<tr>
<td>Pass</td>
<td>2.0 – 3.2(^-)</td>
</tr>
</tbody>
</table>

Note: "\(^+\)" sign denotes 'equal to or more than'; "\(^-\)" sign denotes 'less than'.

23.6 There is no requirement for the Board of Examiners to produce an award list which conforms to the guidelines in Section 23.5 above.

24. CURRICULUM MAP

(Please see page 31.)
25. SYLLABI

(Please see pages 32 to 122.)

APPENDIX

(Please see pages 123 to 124.)
<table>
<thead>
<tr>
<th>Programme Intended Learning Outcomes</th>
<th>AMA1001*</th>
<th>AMA1011*</th>
<th>AMA1021*</th>
<th>AP0001*</th>
<th>AP0003*</th>
<th>AP10009*</th>
<th>EE1010*</th>
<th>EE2010*</th>
<th>EE2030*</th>
<th>EE3010*</th>
<th>EE3030*</th>
<th>EE3050*</th>
<th>EE3070*</th>
<th>EE3090*</th>
<th>IC2111*</th>
<th>LCR - English*+</th>
<th>LCR - Chinese*+</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Understand the fundamentals of science and engineering, and have the ability to apply them.</td>
<td>✔ ✔ ✔ ✔ ✔ ✔ ✔ ✔ ✔ ✔</td>
<td>✔ ✔ ✔</td>
<td>✔ ✔ ✔ ✔ ✔</td>
<td>✔ ✔</td>
<td>✔ ✔</td>
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<tr>
<td>2 Conduct experiments, as well as to evaluate the outcomes.</td>
<td>✔ ✔ ✔ ✔</td>
<td>✔ ✔</td>
<td>✔ ✔</td>
<td>✔</td>
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</tr>
<tr>
<td>3 Analyse and evaluate a system, component or process of given specifications and constraints</td>
<td>✔ ✔</td>
<td>✔ ✔</td>
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<tr>
<td>4 Identify, formulate and solve problems relevant to EIE.</td>
<td>✔ ✔ ✔ ✔</td>
<td>✔ ✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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</tr>
<tr>
<td>5 Have the ability to use modern engineering/IT tools appropriate to EIE practice.</td>
<td>✔ ✔ ✔ ✔</td>
<td>✔ ✔</td>
<td>✔</td>
<td>✔</td>
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</tr>
<tr>
<td>6 Be able to work with others collaboratively in a team and have a knowledge of leadership.</td>
<td>✔ ✔</td>
<td>✔</td>
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<tr>
<td>7 Recognize professional responsibility.</td>
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<tr>
<td>8 Communicate effectively.</td>
<td>✔ ✔</td>
<td>✔ ✔</td>
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</tr>
<tr>
<td>9 Recognize the need for life-long learning.</td>
<td>✔ ✔ ✔ ✔ ✔</td>
<td>✔ ✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Be able to participate in creative activities.</td>
<td>✔ ✔ ✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
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<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
</tbody>
</table>

Note:
* Compulsory subject
# Elective subject
✓ Supports this programme intended learning outcome

**EIE Subject Title**

- EIE2101 Basic Circuit Analysis
- EIE2103 Basic Electronics
- EIE2261 Logic Design
- EIE2264 Computer Programming
- EIE2282 Information Technology
- EIE3106 Integrated Project
- EIE3114 Database System
- EIE3361 Computer System Fundamentals
- EIE3362 Linear Systems
- EIE3373 Microcontroller Systems and
t- EIE3375 Object Oriented Design and
- EIE3381 Communication Fundamentals
- EIE3399 Data Communications

**Servicing Subject Title**

- AMA100 Basic Mathematics - an Introduction to Algebra and Differential Calculus
- AMA1101 Calculus I
- AMA1102 Calculus IA
- AMA1103 Introductory Linear Algebra
- AMA1104 Introductory Probability
- AMA2111 Mathematics I
- AP00003 Foundation Physics II
- AP10009 University Physics II
- IC2111 Industrial Centre Training I for EIE

**CAR - Cluster-Area Requirement Subjects**

**LCR - Language and Communication Requirement Subjects (English) - ELCXXXX**

**LCR - Language and Communication Requirement Subjects (Chinese) - CBSXXXX**
### Subject Description Form

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>AP00003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Title</td>
<td>Foundation Physics II</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Level</td>
<td>0</td>
</tr>
<tr>
<td>Pre-requisite/ Co-requisite/ Exclusion</td>
<td>Nil</td>
</tr>
<tr>
<td>Objectives</td>
<td>To provide students with fundamental knowledge in physics focusing on the topics of waves and electromagnetism.</td>
</tr>
</tbody>
</table>

#### Intended Subject Learning Outcomes

Upon completion of the subject, students will be able to:

1. grasp a basic understanding in selected fundamental physical principles in waves and electromagnetism;
2. solve real-life problems based on the physical principles; and
3. appreciate the importance of some physical principles as employed in various branches of engineering.

#### Contribution of the Subject to the Attainment of the Programme Outcomes

Programme Outcomes:

- Category A: Professional/academic knowledge and skills
  - Programme Outcome 1.

#### Subject Synopsis/ Indicative Syllabus

**Waves**
Nature of waves; wave motion and propagation; longitudinal and transverse waves; reflection and refraction; superposition of waves; standing waves; diffraction and interference; sound waves; light in electromagnetic spectrum; reflection and refraction of light; total internal reflection; image formation by mirrors and lenses; wave nature of light.

**Electromagnetism**
Electric charges; electric field and potential; current, potential difference and resistance; Ohm’s law; series and parallel circuits; electrical power; magnetic force and magnetic field; magnetic effect of electric current; magnetic force on moving charges and current-carrying conductors; Hall effect; electromagnetic induction.

#### Teaching/ Learning Methodology

**Lecture:** The fundamentals in waves and electromagnetism will be explained. Examples will be used to illustrate the concepts and ideas in the lecture. The students are free to request help. Homework problem sets will be given. The students are encouraged to solve problems and to use their own knowledge to verify their solutions before seeking assistance.

**Student-centered Tutorial:** Students work on a set of problems in the tutorials. Students are encouraged to try to solve problems before seeking assistance. These problem sets provide them opportunities to apply the knowledge gained from the lecture. They also help the students consolidate what they have learned. Furthermore, students can develop a deeper understanding of the subject in relation to engineering science.
Assessment Methods in Alignment with Intended Subject Learning Outcomes

<table>
<thead>
<tr>
<th>Specific assessment methods/tasks</th>
<th>% weighting</th>
<th>Intended subject learning outcomes to be assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1. Continuous assessment</td>
<td>40%</td>
<td>✓</td>
</tr>
<tr>
<td>2. Examination</td>
<td>60%</td>
<td>✓</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Homework problem sets and tests (assessment method 1) and a final written examination (assessment method 2) all require demonstration of basic understanding of the relevant physics (1), good problem solving skills (2), and being able to relate the fundamental physics to engineering problems (3).

The continuous assessments aim at checking the progress of students study throughout the course, assisting them in self-monitoring of fulfilling the learning outcomes. The examination will be used to assess the knowledge acquired by the students; as well as to determine the degree of achieving the learning outcomes.

Student Study Effort Expected

Class contact (time-tabled):
- Lecture: 28 Hours
- Tutorial: 14 Hours

Other student study effort:
- Self-study: 78 Hours

Total student study effort: 120 Hours

Reading List and References

Last Updated Aug 2013

Prepared by AP Department
### Subject Description Form

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>AMA1100</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subject Title</strong></td>
<td>Basic Mathematics - An Introduction to Algebra and Differential Calculus</td>
</tr>
<tr>
<td><strong>Credit Value</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>Level</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>Pre-requisite /Co-requisite / Exclusion</strong></td>
<td>Nil</td>
</tr>
</tbody>
</table>

#### Objectives

This subject aims to introduce students to the basic concepts and principles of algebra, limit and differentiation. It is designed for those students with only the compulsory mathematics component in the NSS curriculum. Emphasis will be on the understanding of fundamental concepts as well as applications of mathematical techniques in solving practical problems in science and engineering.

#### Intended Subject Learning Outcomes

Upon completion of the subject, students will be able to:

1. apply mathematical reasoning to solve problems in science and engineering;
2. make use of the knowledge of mathematical techniques and adapt known solutions to various situations;
3. apply mathematical modeling in problem solving;
4. demonstrate abilities of logical and analytical thinking.

#### Contribution of the Subject to the Attainment of the Programme Outcomes

Programme Outcomes:

**Category A: Professional/academic knowledge and skills**
- Programme Outcomes 1, 2, 4 and 5.

**Category B: Attributes for all-roundedness**
- Programme Outcomes 9 and 10.

#### Subject Synopsis/Indicative Syllabus

Mathematical Induction; Binomial Theorem; Functions and inverse functions; Trigonometric functions and their inverses. Limit concepts, derivatives and their physical & geometric meanings, rules of differentiation, implicit differentiation, L'Hopital's rule, maxima and minima of a function.

#### Teaching/Learning Methodology

Basic concepts and techniques of topics in algebra and in elementary differential calculus will be discussed in lectures. These will be further enhanced in tutorials through practical problem solving.

#### Assessment Methods in Alignment with Intended Subject Learning Outcomes

<table>
<thead>
<tr>
<th>Specific assessment methods/tasks</th>
<th>% weighting</th>
<th>Intended subject learning outcomes to be assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4</td>
<td></td>
</tr>
<tr>
<td>1. Homework, quizzes and mid-term test</td>
<td>40%</td>
<td>✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>2. Examination</td>
<td>60%</td>
<td>✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>Total</td>
<td>100 %</td>
<td></td>
</tr>
</tbody>
</table>

Continuous Assessment comprises of assignments, in-class quizzes, online quizzes and a mid-term test. An examination is held at the end of the
Questions used in assignments, quizzes, tests and examinations are used to assess students’ level of understanding of the basic concepts and their ability to use mathematical techniques in solving problems in science and engineering.

To pass this subject, students are required to obtain grade D or above in both the continuous assessment and the examination components.

**Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:**

The subject focuses on understanding of basic concepts and application of techniques in algebra, limit and differentiation. As such, an assessment method based mainly on examinations/tests/quizzes is considered appropriate. Furthermore, students are required to submit homework assignments regularly in order to allow subject lecturers to keep track of students’ progress in the course.

<table>
<thead>
<tr>
<th>Student Study Effort Expected</th>
<th>Class contact:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lecture</td>
</tr>
<tr>
<td></td>
<td>Tutorial</td>
</tr>
</tbody>
</table>

**Other student study effort:**

- Self study 42 Hours

**Total student study effort:** 70 Hours

**Reading List and References**


**Last Updated**

Aug 2013

**Prepared by**

AMA Department
### Subject Description Form

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>AMA1101</th>
</tr>
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<tbody>
<tr>
<td>Subject Title</td>
<td>Calculus I</td>
</tr>
<tr>
<td>Credit Value</td>
<td>4</td>
</tr>
<tr>
<td>Level</td>
<td>1</td>
</tr>
<tr>
<td>Pre-requisite</td>
<td>Mathematics plus Module I or Module II</td>
</tr>
</tbody>
</table>

### Objectives
This subject aims to introduce students to the theory and applications of differential and integral calculus. Emphasis will be on the understanding of fundamental concepts as well as applications of mathematical techniques in solving practical problems in science and engineering.

### Intended Subject Learning Outcomes
Upon completion of the subject, students will be able to:
1. apply mathematical reasoning to solve problems in science and engineering;
2. make use of the knowledge of mathematical techniques and adapt known solutions to various situations;
3. apply mathematical modeling in problem solving;
4. demonstrate abilities of logical and analytical thinking.

### Contribution of the Subject to the Attainment of the Programme Outcomes

**Programme Outcomes:**

**Category A: Professional/academic knowledge and skills**
- Programme Outcomes 1, 2, 4 and 5.

**Category B: Attributes for all-roundedness**
- Programme Outcomes 9 and 10.

### Subject Synopsis/Indicative Syllabus
Review of limit and continuity; derivative and rules of differentiation; relative and absolute extremum; Rolle’s theorem and the mean value theorem with applications; logarithmic, exponential, trigonometric and hyperbolic functions; applications of differential calculus including curve sketching. Indefinite and definite integrals; fundamental theorem of calculus; techniques of integration; Taylor’s theorem with remainders; series expansion for elementary functions; improper integrals; some simple applications of integral calculus.

### Teaching/Learning Methodology
Basic concepts and techniques of calculus will be taught in lectures. These will be further enhanced in tutorials through practical problem solving.

### Assessment Methods in Alignment with Intended Subject Learning Outcomes

<table>
<thead>
<tr>
<th>Specific assessment methods/tasks</th>
<th>% weighting</th>
<th>Intended subject learning outcomes to be assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1. Homework, quizzes and mid-term test</td>
<td>40%</td>
<td>✔</td>
</tr>
<tr>
<td>2. Examination</td>
<td>60%</td>
<td>✔</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Continuous Assessment comprises of assignments, in-class quizzes, online quizzes and a mid-term test. An examination is held at the end of the semester.
Questions used in assignments, quizzes, tests and examinations are used to assess students’ level of understanding of the basic concepts and their ability to use mathematical techniques in solving problems in science and engineering.

To pass this subject, students are required to obtain grade D or above in both the continuous assessment and the examination components.

**Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:**

The subject focuses on understanding of basic concepts and application of techniques in calculus. As such, an assessment method based mainly on examinations/tests/quizzes is considered appropriate. Furthermore, students are required to submit homework assignments regularly in order to allow subject lecturers to keep track of students’ progress in the course.

<table>
<thead>
<tr>
<th>Student Study Effort Expected</th>
<th>Class contact:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Lecture</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Tutorial</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other student study effort:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Homework and self-study</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total student study effort</th>
</tr>
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<tbody>
<tr>
<td><strong>140 Hours</strong></td>
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</table>

**Reading List and References**


**Last Updated**

Aug 2013

**Prepared by**

AMA Department
### Subject Description Form

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>AMA1102</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Title</td>
<td>Calculus IA</td>
</tr>
<tr>
<td>Credit Value</td>
<td>4</td>
</tr>
<tr>
<td>Level</td>
<td>1</td>
</tr>
<tr>
<td>Pre-requisite</td>
<td>AMA1100 Foundation Mathematics</td>
</tr>
</tbody>
</table>

#### Objectives
This subject aims to introduce students to the theory and applications of differential and integral calculus. Emphasis will be on the understanding of fundamental concepts as well as applications of mathematical techniques in solving practical problems in science and engineering.

#### Intended Subject Learning Outcomes

Upon completion of the subject, students will be able to:

1. apply mathematical reasoning to solve problems in science and engineering;
2. make use of the knowledge of mathematical techniques and adapt known solutions to various situations;
3. apply mathematical modeling in problem solving;
4. demonstrate abilities of logical and analytical thinking.

#### Contribution of the Subject to the Attainment of the Programme Outcomes

**Programme Outcomes:**

- **Category A: Professional/academic knowledge and skills**
  - Programme Outcomes 1, 2, 4 and 5.
- **Category B: Attributes for all-roundedness**
  - Programme Outcomes 9 and 10.

#### Subject Synopsis/Indicative Syllabus

Review of limit, continuity and derivative; rules of differentiation; relative and absolute extremum; Rolle’s theorem and the mean value theorem with applications; logarithmic, exponential and hyperbolic functions; simple applications of integral calculus; asymptotes of the graph of a function; curve sketching. Indefinite and definite integrals and their properties; fundamental theorem of calculus; techniques of integration; improper integrals; Taylor’s theorem with remainders; series expansion for elementary functions; simple applications of calculus to geometry.

#### Teaching/Learning Methodology

Basic concepts and techniques of calculus will be taught in lectures. These will be further enhanced in tutorials through practical problem solving.

#### Assessment Methods in Alignment with Intended Subject Learning Outcomes

<table>
<thead>
<tr>
<th>Specific assessment methods/tasks</th>
<th>% weighting</th>
<th>Intended subject learning outcomes to be assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1. Homework, quizzes and mid-term test</td>
<td>40%</td>
<td>✓</td>
</tr>
<tr>
<td>2. Examination</td>
<td>60%</td>
<td>✓</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>✓</td>
</tr>
</tbody>
</table>

Continuous Assessment comprises of assignments, in-class quizzes, online quizzes and a mid-term test. An examination is held at the end of the
semester.

Questions used in assignments, quizzes, tests and examinations are used to assess students’ level of understanding of the basic concepts and their ability to use mathematical techniques in solving problems in science and engineering.

To pass this subject, students are required to obtain grade D or above in both the continuous assessment and the examination components.

**Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:**

The subject focuses on understanding of basic concepts and application of techniques in calculus. As such, an assessment method based mainly on examinations/tests/quizzes is considered appropriate. Furthermore, students are required to submit homework assignments regularly in order to allow subject lecturers to keep track of students’ progress in the course.

<table>
<thead>
<tr>
<th>Student Study Effort Expected</th>
<th>Class contact:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lecture 42 Hours</td>
</tr>
<tr>
<td></td>
<td>Tutorial 14 Hours</td>
</tr>
<tr>
<td>Other student study effort:</td>
<td>Homework and self-study 84 Hours</td>
</tr>
<tr>
<td>Total student study effort:</td>
<td>140 Hours</td>
</tr>
</tbody>
</table>


| Last Updated | Aug 2013 |
| Prepared by  | AMA Department |
# Subject Description Form

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>AMA1103</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Title</td>
<td>Introductory Linear Algebra</td>
</tr>
<tr>
<td>Credit Value</td>
<td>2</td>
</tr>
<tr>
<td>Level</td>
<td>1</td>
</tr>
<tr>
<td>Pre-requisite</td>
<td>NSS Mathematics</td>
</tr>
<tr>
<td>Exclusion</td>
<td>NSS Mathematics Module II</td>
</tr>
<tr>
<td>Objectives</td>
<td>This subject aims to introduce students to some basic principles and knowledge of elementary linear algebra. Emphasis will be on the understanding of fundamental concepts as well as applications of mathematical techniques in solving practical problems in science and engineering.</td>
</tr>
<tr>
<td>Intended Subject Learning Outcomes</td>
<td>Upon completion of the subject, students will be able to:</td>
</tr>
<tr>
<td></td>
<td>1. apply mathematical reasoning to solve problems in science and engineering;</td>
</tr>
<tr>
<td></td>
<td>2. make use of the knowledge and techniques in linear algebra and adapt known results to various situations;</td>
</tr>
<tr>
<td></td>
<td>3. apply mathematical modeling in problem solving;</td>
</tr>
<tr>
<td></td>
<td>4. demonstrate abilities of logical and analytical thinking.</td>
</tr>
<tr>
<td>Contribution of the Subject to the Attainment of the Programme Outcomes</td>
<td>Programme Outcomes:</td>
</tr>
<tr>
<td></td>
<td>Category A: Professional/academic knowledge and skills</td>
</tr>
<tr>
<td></td>
<td>• Programme Outcomes 1, 2, 4 and 5.</td>
</tr>
<tr>
<td></td>
<td>Category B: Attributes for all-roundedness</td>
</tr>
<tr>
<td></td>
<td>• Programme Outcomes 9 and 10.</td>
</tr>
<tr>
<td>Subject Synopsis/Indicative Syllabus</td>
<td>Matrices; systems of linear equations and Gaussian elimination; non-singular matrices; determinant; vectors in 2 or 3 dimensions and their inner product; simple applications of vectors in geometry.</td>
</tr>
<tr>
<td>Teaching/Learning Methodology</td>
<td>Basic concepts and techniques of matrices, linear systems and vector spaces will be taught in lectures. These will be further enhanced in tutorials through practical problem solving.</td>
</tr>
<tr>
<td>Assessment Methods in Alignment with Intended Subject Learning Outcomes</td>
<td><strong>Specific assessment methods/tasks</strong></td>
</tr>
<tr>
<td></td>
<td>1. Homework, quizzes and mid-term test</td>
</tr>
<tr>
<td></td>
<td>2. Examination</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

Continuous Assessment comprises of assignments, in-class quizzes, online quizzes and a mid-term test. An examination is held at the end of the semester.
Questions used in assignments, quizzes, tests and examinations are used to assess students’ level of understanding of the basic concepts and their ability to use mathematical techniques in solving problems in science and engineering.

To pass this subject, students are required to obtain grade D or above in both the continuous assessment and the examination components.

**Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:**

The subject focuses on understanding of basic concepts and application of techniques in matrices, determinant, linear systems and vectors. As such, an assessment method based mainly on examinations/tests/quizzes is considered appropriate. Furthermore, students are required to submit homework assignments regularly in order to allow subject lecturers to keep track of students’ progress in the course.

<table>
<thead>
<tr>
<th>Student Study Effort Expected</th>
<th>Class contact:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Lecture</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Tutorial</strong></td>
</tr>
</tbody>
</table>

**Other student study effort:**

- Homework and self-study 42 Hours

**Total student study effort:** 70 Hours

**References**


**Last Updated**

Aug 2013

**Prepared by**

AMA Department
<table>
<thead>
<tr>
<th>Subject Code</th>
<th>AMA1104</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Title</td>
<td>Introductory Probability</td>
</tr>
<tr>
<td>Credit Value</td>
<td>2</td>
</tr>
<tr>
<td>Level</td>
<td>1</td>
</tr>
<tr>
<td>Pre-requisite</td>
<td>NSS Mathematics</td>
</tr>
<tr>
<td>Exclusion</td>
<td>NSS Mathematics Module I</td>
</tr>
<tr>
<td>Objectives</td>
<td>This subject aims to introduce students to some basic principles and knowledge of probability. Emphasis will be on the understanding of fundamental concepts as well as applications of mathematical techniques in solving practical problems in science and engineering.</td>
</tr>
<tr>
<td>Intended Subject Learning Outcomes</td>
<td>Upon completion of the subject, students will be able to:</td>
</tr>
<tr>
<td></td>
<td>1. apply probabilistic and statistical reasoning to describe and analyze essential features of data sets;</td>
</tr>
<tr>
<td></td>
<td>2. make use of the knowledge and techniques in probability and adapt known results to various situations;</td>
</tr>
<tr>
<td></td>
<td>3. develop and extrapolate concepts of probability and statistics in data analysis and problem solving;</td>
</tr>
<tr>
<td></td>
<td>4. demonstrate abilities of logical and analytical thinking.</td>
</tr>
<tr>
<td>Contribution of the Subject to the Attainment of the Programme Outcomes</td>
<td>Programme Outcomes:</td>
</tr>
<tr>
<td></td>
<td>Category A: Professional/academic knowledge and skills</td>
</tr>
<tr>
<td></td>
<td>• Programme Outcomes 1, 2, 4 and 5.</td>
</tr>
<tr>
<td></td>
<td>Category B: Attributes for all-roundedness</td>
</tr>
<tr>
<td></td>
<td>• Programme Outcomes 9 and 10.</td>
</tr>
<tr>
<td>Subject Synopsis/Indicative Syllabus</td>
<td>Introduction to Probability</td>
</tr>
<tr>
<td></td>
<td>Discrete Random Variables</td>
</tr>
<tr>
<td></td>
<td>Introduction to discrete random variables such as uniform, binomial, Poisson, etc. and their probability distributions. Mathematical expectation.</td>
</tr>
<tr>
<td></td>
<td>Continuous Random Variables</td>
</tr>
<tr>
<td></td>
<td>Concept of continuous random variables such as uniform, exponential, normal, etc. and their probability density functions. Mathematical expectation. Normal approximation to the binomial distribution.</td>
</tr>
<tr>
<td></td>
<td>Sampling Distributions</td>
</tr>
<tr>
<td></td>
<td>Population and random samples. Sampling distributions related to sample mean, sample proportions, and sample variances.</td>
</tr>
<tr>
<td></td>
<td>Estimation of Parameters</td>
</tr>
<tr>
<td></td>
<td>Concepts of a point estimator and a confidence interval. Point and interval estimates of a mean and the difference between two means.</td>
</tr>
<tr>
<td>Teaching/Learning Methodology</td>
<td>Basic concepts and techniques of probability and statistics will be taught in lectures. These will be further enhanced in tutorials through practical problem solving and case study.</td>
</tr>
</tbody>
</table>
## Assessment Methods in Alignment with Intended Subject Learning Outcomes

<table>
<thead>
<tr>
<th>Specific assessment methods/tasks</th>
<th>% weighting</th>
<th>Intended subject learning outcomes to be assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Homework, quizzes and mid-term test</td>
<td>40%</td>
<td>✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>2. Examination</td>
<td>60%</td>
<td>✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Continuous Assessment comprises of assignments, in-class quizzes, online quizzes and a mid-term test. An examination is held at the end of the semester.

Questions used in assignments, quizzes, tests and examinations are used to assess students’ level of understanding of the basic concepts and their ability to use mathematical techniques in solving problems in science and engineering.

To pass this subject, students are required to obtain grade D or above in both the continuous assessment and the examination components.

**Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:**

The subject focuses on understanding of basic concepts and application of techniques in probability distributions, random variables and sampling distribution. As such, an assessment method based mainly on examinations/tests/quizzes is considered appropriate. Furthermore, students are required to submit homework assignments regularly in order to allow subject lecturers to keep track of students' progress in the course.

## Student Study Effort Expected

<table>
<thead>
<tr>
<th>Class contact:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Lecture</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>• Tutorial</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Other student study effort:**

<table>
<thead>
<tr>
<th>• Homework and self-study</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Total student study effort:**

<table>
<thead>
<tr>
<th>70 Hours</th>
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</table>

## References


## Last Updated

Aug 2013

## Prepared by

AMA Department
<table>
<thead>
<tr>
<th>Subject Code</th>
<th>AP1009</th>
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</thead>
<tbody>
<tr>
<td>Subject Title</td>
<td>University Physics II</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
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<tr>
<td>Level</td>
<td>1</td>
</tr>
<tr>
<td>Pre-requisite/Co-requisite/Exclusion</td>
<td>Nil</td>
</tr>
<tr>
<td>Objectives</td>
<td>To provide students with fundamental knowledge in physics focusing on the topics of waves and electromagnetism. This course prepares students to study science, engineering or related programmes.</td>
</tr>
<tr>
<td>Intended Subject Learning Outcomes</td>
<td>Upon completion of the subject, students will be able to:</td>
</tr>
<tr>
<td></td>
<td>1. apply simple laws in optics to explain image formation;</td>
</tr>
<tr>
<td></td>
<td>2. explain phenomena related to the wave character of light;</td>
</tr>
<tr>
<td></td>
<td>3. define electrostatic field and potential;</td>
</tr>
<tr>
<td></td>
<td>4. use Gauss’ law in solving problems in electrostatics;</td>
</tr>
<tr>
<td></td>
<td>5. solve problems on interaction between current and magnetic field;</td>
</tr>
<tr>
<td></td>
<td>6. apply electromagnetic induction to various phenomena; and</td>
</tr>
<tr>
<td></td>
<td>7. solve simple problems in AC circuits.</td>
</tr>
<tr>
<td>Contribution of the Subject to the Attainment of the Programme Outcomes</td>
<td>Programme Outcomes:</td>
</tr>
<tr>
<td></td>
<td>Category A: Professional/academic knowledge and skills</td>
</tr>
<tr>
<td></td>
<td>• Programme Outcome 1.</td>
</tr>
<tr>
<td>Subject Synopsis/Indicative Syllabus</td>
<td>Waves and optics</td>
</tr>
<tr>
<td></td>
<td>Nature of light, reflection and refraction; image formation by mirrors and lenses; compound lens; microscope and telescope; superposition of waves; Huygen’s principle; interference and diffraction; interferometers and diffraction grating; polarization.</td>
</tr>
<tr>
<td></td>
<td>Electromagnetism</td>
</tr>
<tr>
<td></td>
<td>Charge and Field; Coulomb’s law and Gauss’ law; electrostatic field and potential difference; capacitors and dielectric; current and resistance; Ohm’s law; electromotive force, potential difference and RC circuits; magnetic force on moving charges and current; Hall effect; Biot-Savart law and Ampere’s law; Faraday’s law and Lenz’s law; self-inductance and mutual inductance; transformers; AC circuits and applications.</td>
</tr>
<tr>
<td>Teaching/Learning Methodology</td>
<td>Lecture: The fundamentals in optics and electromagnetism will be explained. Examples will be used to illustrate the concepts and ideas in the lecture. Students are free to request help. Homework problem sets will be given.</td>
</tr>
<tr>
<td></td>
<td>Student-centered Tutorial: Students will work on a set of problems in tutorials. Students are encouraged to solve problems and to use their own knowledge to verify their solutions before seeking assistance. These problem sets provide them opportunities to apply their knowledge gained from the lecture. They also help the students to consolidate what they have learned. Furthermore, students can develop a deeper understanding of the subject in relation to daily life phenomena or experience.</td>
</tr>
<tr>
<td></td>
<td>e-learning: In order to enhance the effectiveness of teaching and learning processes, electronic means and multimedia technologies would be adopted for presentations of lectures; communication between students and lecturer;</td>
</tr>
</tbody>
</table>
delivery of handouts, homework and notices etc.

<table>
<thead>
<tr>
<th>Assessment Methods in Alignment with Intended Subject Learning Outcomes</th>
<th>Specific assessment methods/tasks</th>
<th>% weighting</th>
<th>Intended subject learning outcomes to be assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1. Continuous assessment</td>
<td>40%</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>2. Examination</td>
<td>60%</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

**Continuous assessment:** The continuous assessment includes assignments, quizzes and test(s) which aim at checking the progress of students study throughout the course, assisting them in fulfilling the learning outcomes. Assignments in general include end-of-chapter problems, which are used to reinforce and assess the concepts and skills acquired by the students; and to let them know the level of understanding that they are expected to reach. At least one test would be administered during the course of the subject as a means of timely checking of learning progress by referring to the intended outcomes, and as means of checking how effective the students digest and consolidate the materials taught in the class.

**Examination:** This is a major assessment component of the subject. It would be a closed-book examination. Complicated formulas would be given to avoid rote memory, such that the emphasis of assessment would be put on testing the understanding, analysis and problem solving ability of the students.

<table>
<thead>
<tr>
<th>Student Study Effort Expected</th>
<th>Class contact (time-tabled):</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lecture</td>
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<td>Tutorial</td>
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<table>
<thead>
<tr>
<th>Other student study effort:</th>
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<tbody>
<tr>
<td>Self-study</td>
<td>78 Hours</td>
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**Total student study effort:** 120 Hours

|---|---|

<table>
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<th>Aug 2013</th>
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<p>| Prepared by | AP Department |</p>
<table>
<thead>
<tr>
<th>Subject Code</th>
<th>CBS1101P</th>
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<tbody>
<tr>
<td>Subject Title</td>
<td>Fundamentals of Chinese Communication (大學中文傳意)</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Level</td>
<td>1</td>
</tr>
<tr>
<td>Pre-requisite / Co-requisite / Exclusion</td>
<td>Remarks: For students entering with HKDSE Chinese subject result at Level 3 or equivalent.</td>
</tr>
</tbody>
</table>

**Objectives**

This subject aims to foster students’ communicative competence in using both written and spoken Chinese to communicate for effectiveness, appropriateness, flexibility and politeness in real situated social settings.

**Intended Subject Learning Outcomes**

Upon completion of the subject, students will be able to:

1. develop effective communication skills in written Chinese required for basic usage in the workplace;
2. master properly and flexibly, the written format, organization, language and style of expression of various genres of Chinese practical writing such as official correspondences, publicity materials, reports and proposals;
3. give formal presentation in Putonghua effectively and appropriately;
4. engage with formal discussion in Putonghua effectively and politely.

**Contribution of the Subject to the Attainment of the Programme Outcomes**

**Programme Outcomes:**

Category B: Attributes for all-roundedness

- Programme Outcome 8.

**Subject Synopsis/Indicative Syllabus**

1. Written Chinese for practical purposes
   - Format, organization, language of each genre;
   - Coherence in Chinese writing
   - Style of expression of different genres such as official correspondences, publicity materials;
   - Context dependent stylistic variation
   - Appropriateness in communication

2. Formal Presentation in Putonghua
   - Choice of words in Putonghua
   - The flow of speaking
   - Manner of speaking and gesture

3. Formal Discussion in Putonghua
   - Identification of main idea and key messages
   - Evaluation of relevancy of information in a message
   - Skills of summarizing
   - Agreeing/disagreeing/answering to questions politely

**Teaching/Learning Methodology**

The subject will be conducted in Putonghua, in highly interactive seminars. The subject will motivate the students’ active participation by assigning group presentation/discussion in class. In a forum-like format, students are guided to: (1) present to the class, their understanding of each genre designed for the syllabus for discussions and improvement; (2) modify passages in a given genre/style into other genres/styles for addressing different audiences and purposes; (3) give a power-point presentation in Putonghua in front of the whole class, then receive on spot feedback for
discussion and improvement; then (4) prepare a written report/proposal on the same topic; and (5) engage in formal discussion in Putonghua on topics related to current issues and/or business operation; then (6) produce a written document on the same topic using a chosen genre.

### Assessment Methods in Alignment with Intended Subject Learning Outcomes

<table>
<thead>
<tr>
<th>Specific assessment methods/tasks</th>
<th>% weighting</th>
<th>Intended subject learning outcomes to be assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Written Assignment</td>
<td>30%</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>2. Oral Presentation</td>
<td>30%</td>
<td>√</td>
</tr>
<tr>
<td>3. Final Examination</td>
<td>40%</td>
<td>√ √ √ √</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
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</table>

**Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:**

Both written assignments and oral presentation will focus on the functions of communication and the appropriateness of language used in authentic social settings. The examination emphasizes the correctness of expression and students' general competence in Chinese Language.

Students obtaining a subject pass must pass both components, i.e. the continuous assessment and examination component of the subject. Students will get failure of the subject if he/she fails in either one of the two components.

### Student Study Effort Expected

<table>
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<thead>
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<tbody>
<tr>
<td>• Outside Class Practice</td>
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</tr>
<tr>
<td>• Self-study</td>
<td></td>
</tr>
</tbody>
</table>

**Total student study effort:** 126 Hours

### Reading List and References

1. 路德慶主編 (1982) 《寫作教程》，華東師範大學出版社
2. 邵守義（1991）《演講全書》，吉林人民出版社
3. 陳建民（1994）《說話的藝術》，語文出版社
4. 李軍華（1996）《口才學》，華中理工大學出版社
5. 陳瑞端著 (2000) 《生活錯別字》，中華書局
6. 邢福義、汪國勝主編（2003）《現代漢語》，華中師範大學出版社
7. 于成鲲主編（2003）《現代應用文》，復旦大學出版社
8. 李白堅、丁迪蒙（2004）《大學體型寫作訓練規程》，上海大學出版社
9. 鍾文佳（2004）《漢語口才學》，西南師範大學出版社
10. 于成鲲、陳瑞端、秦扶一、金振邦主編（2011）《當代應用文寫作規範叢書》，復旦大學出版社

### Last Updated

Aug 2013

### Prepared by

CBS Department
# Subject Description Form

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<tbody>
<tr>
<td>Subject Title</td>
<td>Advanced Communication Skills in Chinese (高階中文傳意)</td>
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<tr>
<td>Credit Value</td>
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<td>Level</td>
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<tr>
<td>Pre-requisite/Co-requisite/Exclusion</td>
<td>For students entering with HKDSE Chinese subject result at Level 4 and 5 or equivalent</td>
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<tr>
<td>Objectives</td>
<td>This subject aims to develop effective communication skills of students in both spoken and written Chinese which are required for the business and professional setting.</td>
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<tr>
<td>Intended Subject Learning Outcomes</td>
<td>Upon completion of the subject, students will be able to:</td>
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<tr>
<td></td>
<td>1. develop effective communication skills in both spoken and written Chinese required for in the business and professional setting;</td>
</tr>
<tr>
<td></td>
<td>2. master the format, organization, language and style of expression of the following genres of Chinese practical writing: argumentative and persuasive writing, public speech;</td>
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<tr>
<td></td>
<td>3. give public speech;</td>
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<tr>
<td></td>
<td>4. produce creative writing.</td>
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<td>Contribution of the Subject to the Attainment of the Programme Outcomes</td>
<td>Programme Outcomes:</td>
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<tr>
<td></td>
<td>Category B: Attributes for all-roundedness</td>
</tr>
<tr>
<td></td>
<td>• Programme Outcome 8.</td>
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<tr>
<td>Subject Synopsis/Indicative Syllabus</td>
<td>1. Written Chinese for Practical Purposes</td>
</tr>
<tr>
<td></td>
<td>• Uses of words and sentences, choice of diction;</td>
</tr>
<tr>
<td></td>
<td>• Coherence and thread of thinking in Chinese writing</td>
</tr>
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<td></td>
<td>• Context dependent stylistic variation</td>
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<tr>
<td></td>
<td>• Format, organization, language and style of expression of speeches, argumentative &amp; persuasive writing;</td>
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<tr>
<td></td>
<td>2. Public Speech</td>
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<td></td>
<td>• Contextual elements: the audiences, the purpose and the topic</td>
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<td></td>
<td>• Identification of key points and collection of supporting information</td>
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<td></td>
<td>• Articulation and flow of speaking</td>
</tr>
<tr>
<td></td>
<td>• Choice of words, manner and gesture</td>
</tr>
<tr>
<td></td>
<td>• Using of visual aids</td>
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<td>• Handling of question and answer session</td>
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<td>3. Creative Writing</td>
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<td></td>
<td>• Understanding of the features of creative writing</td>
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<td></td>
<td>• Being able to appreciate the arts of writing</td>
</tr>
<tr>
<td>Teaching/ Learning Methodology</td>
<td>The subject will be conducted in highly interactive seminars. The subject will motivate the students’ active participation by assigning group presentation/discussion in class. In a forum-like format, students are guided to:</td>
</tr>
<tr>
<td></td>
<td>1. present to the class, their understanding of each genre designed for the syllabus for discussions and improvement;</td>
</tr>
<tr>
<td></td>
<td>2. modify passages in a given genre/style into other genres/styles for addressing different audiences and purposes;</td>
</tr>
</tbody>
</table>
3. prepare a script for public speaking;  
4. give a public speech in front of the whole class, then receive on spot feedback for discussion and improvement; and  
5. engage in formal discussion on topics related to current issues and/or business operation that require persuasive and argumentative skills; then  
6. produce an argumentative article on the same topic.

| Assessment Methods in Alignment with Intended Subject Learning Outcomes |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|
| Specific assessment methods/tasks | % weightings | Intended subject learning outcomes to be assessed (Please tick as appropriate) | 1 | 2 | 3 | 4 |
| 1. Prose Writing | 20% | ✓ | ✓ | | |
| 2. Written Draft for Formal Speech | 10% | ✓ | ✓ | ✓ | |
| 3. Formal Speech | 10% | ✓ | ✓ | ✓ | |
| 4. Feature Article | 20% | ✓ | ✓ | | ✓ |
| 5. Class Participation | 10% | ✓ | ✓ | ✓ | ✓ |
| 6. Final Examination | 30% | ✓ | ✓ | ✓ | ✓ |
| Total | 100% | | | | | |

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

Both written assignments and oral presentation will focus on the functions of communication and the adequacy of language used in authentic social settings.

The examination emphasizes the correctness of expression and students' general competence in Chinese Language.

Students obtaining a subject pass must pass both components, i.e. the continuous assessment and examination component of the subject. Students will get failure of the subject if he/she fails in either one of the two components.

<table>
<thead>
<tr>
<th>Student Study Effort Expected</th>
<th>Class contact (time-tabled):</th>
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<tbody>
<tr>
<td></td>
<td>Seminar</td>
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<tr>
<td>Other student study effort:</td>
<td>Outside Class Practice</td>
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<tr>
<td></td>
<td>Self-study</td>
</tr>
<tr>
<td>Total student study effort:</td>
<td></td>
</tr>
</tbody>
</table>

Reading List and References

1. 路德慶 主編 (1982) 《寫作教程》，華東師範大學出版社
2. 邵守義 (1991) 《演講全書》，吉林人民出版社
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10. 于成棍、陳瑞端、秦扶一、金振邦 主編 (2011) 《當代應用文寫作規範叢
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<tr>
<td>Prepared by</td>
<td>CBS Department</td>
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<td><strong>Subject Description Form</strong></td>
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<tr>
<td><strong>Subject Code</strong></td>
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<td><strong>Subject Title</strong></td>
<td>Fundamentals of Chinese Communication for Higher Diploma Students （高級文憑實用中文課程）</td>
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<td><strong>Credit Value</strong></td>
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<td><strong>Level</strong></td>
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<td><strong>Pre-requisite/ Co-requisite/ Exclusion</strong></td>
<td>Remarks: For HD students in 2013-14 co-hort and beyond entering with HKDSE Chinese subject result at level 2, or equivalent</td>
</tr>
<tr>
<td><strong>Objectives</strong></td>
<td>This subject aims to enhance students’ basic competence in both written and spoken Chinese in order to communicate in real situated communicative settings effectively, appropriately, flexibly and politely.</td>
</tr>
</tbody>
</table>
| **Intended Subject Learning Outcomes** | Upon completion of the subject, students will be able to: 
1. master correct sentential expressions and choice of words for effective communication through written Chinese; 
2. master the format, organization, language and style of expression of various genres of Chinese practical writing such as official correspondences, publicity materials; 
3. master the articulation of Putonghua in order to give formal presentation in Putonghua effectively and appropriately; 
4. be aware of one’s position in formal discussion and express oneself in Putonghua clearly and politely. |
| **Contribution of the Subject to the Attainment of the Programme Outcomes** | Programme Outcomes: 
**Category B: Attributes for all-roundedness** 
• Programme Outcome 8. |
| **Subject Synopsis/Indicative Syllabus** | 1. Written Chinese for practical purposes  
• Uses of words and sentences; 
• Coherence in Chinese writing 
• Format, organization, language 
• Style of expression of official correspondences, publicity materials 
• Context dependent stylistic variation 
• Appropriateness in communication 

2. Formal Presentation in Putonghua  
• articulation in Putonghua 
• flow of speaking 
• Choice of words, manner and gesture 

3. Formal Discussion in Putonghua  
• Identification of main idea and key messages 
• Evaluation of relevancy of information in a message 
• Skills of seeking clarity/consent/disagreement/answer to a question 
• Skills of summarizing |
| **Teaching/Learning Methodology** | The subject will be conducted in Putonghua, in highly interactive seminars. The subject will motivate the students’ active participation by assigning group presentation/discussion in class. In a forum-like format, students are guided to: (1) present to the class, their understanding of each genre designed for the syllabus for improvement; (2) modify passages in a given genre/style into... |
other genres/styles for addressing different audiences and purposes; (3) give a power-point presentation in Putonghua in front of the whole class, then receive on spot feedback for improvement; then (4) prepare a written report/proposal on the same topic; and (5) engage in formal discussion in Putonghua on topics related to current issues and/or business operation; then (6) produce a written document on the same topic using a chosen genre.

**Assessment Methods in Alignment with Intended Subject Learning Outcomes**

<table>
<thead>
<tr>
<th>Specific assessment methods/tasks</th>
<th>% weighting</th>
<th>Intended subject learning outcomes to be assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Written Assignment</td>
<td>30%</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>2. Oral Presentation</td>
<td>30%</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>3. Final Examination</td>
<td>40%</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

**Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:**

Both written assignments and oral presentation will focus on the functions of communication and the adequacy of language used in authentic social settings. The examination emphasizes the correctness of expression and students’ general competence in Chinese Language.

Students obtaining a subject pass must pass both components, i.e. the continuous assessment and examination component of the subject.

**Student Study Effort Expected**

<table>
<thead>
<tr>
<th>Class contact:</th>
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<tbody>
<tr>
<td>• Seminar</td>
</tr>
</tbody>
</table>

**Other student study effort:**

| • Outside Class Practice                                                      | 42 Hours |
| • Self-study                                                                  | 42 Hours |

**Total student study effort:**

| 126 Hours |

**Reading List and References**

1. 路德慶主編 (1982) 《寫作教程》，華東師範大學出版社
2. 邵守義（1991）《演講全書》，吉林人民出版社
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**Last Updated**

Aug 2013

**Prepared by**

CBS Department
<table>
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<tr>
<th>Subject Code</th>
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<tr>
<td>Subject Title</td>
<td>University English for Higher Diploma Students I</td>
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<td>Credit Value</td>
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<td>Level</td>
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<tr>
<td>Pre-requisite / Co-requisite / Exclusion</td>
<td>Nil</td>
</tr>
</tbody>
</table>

**Objectives**

This subject aims to help higher diploma students entering with HKDSE English Language Level 2 to study effectively in an English medium tertiary learning environment, and to acquire academic English skills to enable them to further their studies at university.

**Intended Subject Learning Outcomes**

Upon successful completion of the subject, students will be able to:

1. refer to academic sources in written texts and oral presentations by using paraphrasing and summarising skills
2. select appropriate vocabulary and grammar to achieve an academic style
3. plan, write and revise written texts with reference to sources

To achieve the above outcomes, students are expected to use language and text structure appropriate to the context, select information critically, and present information logically and coherently.

**Contribution of the Subject to the Attainment of the Programme Outcomes**

Programme Outcomes:

- Category B: Attributes for all-roundedness
  - Programme Outcome 8.

**Subject Synopsis/Indicative Syllabus**

1. Written communication
   - Analysing and practising common writing functions; improving the ability of writing topic sentences and employing appropriate strategies for paragraph development; understanding common patterns of organisation in academic writing; taking notes from written and spoken sources; practising summarising and paraphrasing skills; improving coherence and cohesion in writing; developing revision and proofreading skills.

2. Spoken communication
   - Recognising the differences between spoken and written communication in English in university study contexts; identifying and practising verbal and non-verbal interaction strategies in academic oral presentations.

3. Language development
   - Improving and extending relevant features of grammar, vocabulary and pronunciation; developing appropriate academic reading and listening skills.

**Teaching/Learning Methodology**

The study method is a combination of seminar, self-access work and online learning. Following a blended delivery approach, activities include teacher input as well as in- and out-of-class work and online learning. Students make use of elearning resources to further improve their proficiency and academic English skills.

Learning materials developed by the English Language Centre are used throughout the course. Students will be referred to learning resources on the Internet and in the ELC’s Centre for Independent Language Learning.
**Assessment Methods in Alignment with Intended Subject Learning Outcomes**

<table>
<thead>
<tr>
<th>Specific assessment methods/tasks</th>
<th>% weighting</th>
<th>Intended subject learning outcomes to be assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Academic oral presentation</td>
<td>40%</td>
<td>✓ ✓</td>
</tr>
<tr>
<td>2. Short academic texts</td>
<td>30%</td>
<td>✓</td>
</tr>
<tr>
<td>3. Academic expository essay</td>
<td>30%</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

**Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:**

In order for students to present an effective academic oral presentation with reference to sources in Assessment 1, they will need to read and employ a variety of sources (ref. LOs (1) and (2)). Assessment 2 demonstrates achievement of LO (2) for students to plan, write and revise a short academic text. Assessment 3 necessitates achievement of all LOs in order to write an effective academic expository essay with reference to sources.

In addition to these assessments, students are required to complete further language training, through web-based language work, reading tasks and online reflections. The additional language training offered in online tasks is aligned with all the three LOs. They require students to critically read and summarise information contained in a variety of sources, as required in LOs (1) and (2).

**Student Study Effort Expected**

- **Class contact:**
  - Seminars: 42 Hours

- **Other student study effort:**
  - Self study/preparation: 84 Hours

- **Total student study effort:** 126 Hours

**Reading List and References**

**Course material**

Learning materials developed by the English Language Centre.

**Recommended references**


**Last Updated**

Aug 2013

**Prepared by**

English Language Centre
# Subject Description Form

<table>
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<td>University English for Higher Diploma Students II</td>
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<td>Credit Value</td>
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<td>Level</td>
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</tr>
<tr>
<td>Pre-requisite</td>
<td>ELC1007 University English for Higher Diploma Students I</td>
</tr>
</tbody>
</table>

## Objectives

This subject aims to help higher diploma students entering with HKDSE English Language Level 2 to study effectively in an English medium tertiary learning environment, and to enhance their proficiency and communication skills in English.

## Intended Subject Learning Outcomes

Upon successful completion of the subject, students will be able to:

1. plan, write and revise discursive essays and reports
2. refer to sources in written texts by using summarising, paraphrasing and synthesising skills
3. use appropriate verbal and non-verbal skills in spoken communication in a group context

To achieve the above outcomes, students are expected to use language and text structure appropriate to the context, select information critically, and present information logically and coherently.

## Contribution of the Subject to the Attainment of the Programme Outcomes

### Programme Outcomes:

Category B: Attributes for all-roundedness

- Programme Outcome 8.

## Subject Synopsis/Indicative Syllabus

1. **Written communication**
   - Further developing the ability of writing succinct topic sentences and employing appropriate strategies for paragraph development; using findings to write effective reports with clear recommendations and conclusions; taking effective notes from written and spoken sources; further developing the skills needed for effective use of sources in written texts; further extending coherence and cohesion in writing; revising and proofreading effectively.

2. **Spoken communication**
   - Further developing the verbal and non-verbal strategies in oral interactions; developing and applying critical thinking skills to discussions of issues.

3. **Language development**
   - Further improving and extending relevant features of grammar, vocabulary and pronunciation; extending appropriate reading and listening skills.

## Teaching/Learning Methodology

The study method is a combination of seminar, self-access work and online learning. Following a blended delivery approach, activities include teacher input as well as in- and out-of-class work and online learning. Students make use of e-learning resources to further improve their proficiency and academic English skills.

Learning materials developed by the English Language Centre are used throughout the course. Students will be referred to learning resources on the Internet and in the ELC’s Centre for Independent Language Learning.
### Assessment Methods in Alignment with Intended Subject Learning Outcomes

<table>
<thead>
<tr>
<th>Specific assessment methods/tasks</th>
<th>% weighting</th>
<th>Intended subject learning outcomes to be assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Extended academic essay</td>
<td>30%</td>
<td>✓</td>
</tr>
<tr>
<td>2. Report with reference to findings and sources</td>
<td>30%</td>
<td>✓</td>
</tr>
<tr>
<td>3. Group discussion</td>
<td>40%</td>
<td>✓</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

**Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:**

Assessments 1 and 2 necessitate achievement of LOs (1) and (2) in order for students to write an effective extended essay and report. Assessment 3 requires students to demonstrate their achievement of LO (3).

In addition to these assessments, students are required to complete further language training, through web-based language work, reading tasks and online reflections. The additional language training offered in online tasks is aligned with all the three LOs.

### Student Study Effort Expected

**Class contact:**
- Seminars: 42 Hours

**Other student study effort:**
- Self study/preparation: 84 Hours

**Total student study effort:** 126 Hours

### Reading List and References

**Course material**
Learning materials developed by the English Language Centre.

**Recommended references**
Subject Description Form

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>ELC1011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Title</td>
<td>Practical English for University Studies</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Level</td>
<td>1</td>
</tr>
<tr>
<td>Pre-requisite / Co-requisite / Exclusion</td>
<td>Nil</td>
</tr>
</tbody>
</table>

Objectives
This subject aims to develop and enhance students’ general proficiency and communication skills in English. A strong focus will be given to enhancing competence and confidence in grammar, vocabulary, pronunciation and fluency.

Intended Subject Learning Outcomes
Upon successful completion of the subject, students will be able to:
1. use a variety of strategies to comprehend meaning and messages of a range of written and spoken texts
2. organise and write accurate and coherent short texts
3. use appropriate verbal and non-verbal skills in spoken communication

To achieve the above outcomes, students are expected to use language and text structure appropriate to the context, select information critically, and present their views logically and coherently.

Contribution of the Subject to the Attainment of the Programme Outcomes
Programme Outcomes:
Category B: Attributes for all-roundedness
• Programme Outcome 8.

Subject Synopsis/Indicative Syllabus
1. Written communication
   Enhancing the use of accurate and appropriate grammatical structures and vocabulary for various communicative purposes; improving the ability to organise written texts logically; and improving cohesion and coherence in writing.

2. Spoken communication
   Developing verbal and non-verbal interaction strategies appropriate to the context and level of formality.

3. Reading and listening
   Understanding the content and structure of information delivered in written and spoken texts; developing effective reading and listening strategies; and using study tools such as dictionaries to obtain lexical and phonological information.

4. Language development
   Improving and extending relevant features of grammar, vocabulary, pronunciation and fluency.

Teaching/Learning Methodology
The study method is primarily seminar-based. Following a blended delivery approach, activities include teacher input as well as in- and out-of-class individual and group work involving drafting of texts, information search, mini-presentations and discussions. Students will make use of elearning resources and web-based work to improve their grammar and vocabulary, and other language skills.

Learning materials developed by the English Language Centre are used throughout the course. Students will be referred to learning resources on the
Internet and in the ELC’s Centre for Independent Language Learning. Additional reference materials will be recommended as required.

### Assessment Methods in Alignment with Intended Subject Learning Outcomes

<table>
<thead>
<tr>
<th>Specific assessment methods/tasks</th>
<th>% weighting</th>
<th>Intended subject learning outcomes to be assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1. In-class grammar and vocabulary tests</td>
<td>25%</td>
<td>✓</td>
</tr>
<tr>
<td>2. Oral assessment</td>
<td>40%</td>
<td>✓</td>
</tr>
<tr>
<td>3. Writing assessment</td>
<td>35%</td>
<td>✓</td>
</tr>
<tr>
<td>Total</td>
<td>100 %</td>
<td></td>
</tr>
</tbody>
</table>

**Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:**

The in-class tests, which assess students’ grammar and vocabulary and their ability, necessitate achievement of LOs (1) and (2). The oral assessment assesses students’ ability to speak accurately, appropriately and confidently. Students will need to research a topic, organise information from a variety of sources, and present the information as a digital story (ref. LOs (1) and (3)). The writing assessment evaluates students’ ability write a longer text in accurate and appropriate grammatical structures (ref. LOs (1) and (2)).

In addition to these assessments, students are required to complete further language training through web-based language work. The additional language training offered in online tasks is aligned with all the three LOs and corresponds to their learning in class.

### Student Study Effort Expected

**Class contact:**

- Seminar 42 Hours

**Other student study effort:**

- Self-study/preparation 84 Hours

**Total student study effort:** 126 Hours

### Reading List and References

**Course material**

Learning materials developed by the English Language Centre

**Recommended references**


### Last Updated

Aug 2013

### Prepared by

English Language Centre
### Subject Description Form

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>ELC1013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Title</td>
<td>English for University Studies</td>
</tr>
<tr>
<td>(This subject will be offered for students who will primarily be using IEEE/Vancouver referencing styles in their university studies.)</td>
<td></td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Level</td>
<td>1</td>
</tr>
<tr>
<td>Pre-requisite / Co-requisite / Exclusion</td>
<td>Students entering the University with Level 5 from the HKDSE will be exempted from this subject. They can proceed to Advanced English for University Studies (ELC1014).</td>
</tr>
<tr>
<td>Objectives</td>
<td>This subject aims to help students study effectively in the University's English medium learning environment, and to improve and develop their English language proficiency within a framework of university study contexts.</td>
</tr>
<tr>
<td>Intended Subject Learning Outcomes</td>
<td>Upon successful completion of the subject, students will be able to:</td>
</tr>
<tr>
<td>1. refer to sources in written texts and oral presentations</td>
<td></td>
</tr>
<tr>
<td>2. paraphrase and summarise materials from written and spoken sources</td>
<td></td>
</tr>
<tr>
<td>3. plan, write and revise expository essays with references to sources</td>
<td></td>
</tr>
<tr>
<td>4. deliver effective oral presentations</td>
<td></td>
</tr>
<tr>
<td>To achieve the above outcomes, students are expected to use language and text structure appropriate to the context, select information critically, and present information logically and coherently.</td>
<td></td>
</tr>
<tr>
<td>Contribution of the Subject to the Attainment of the Programme Outcomes</td>
<td>Programme Outcomes:</td>
</tr>
<tr>
<td>Category B: Attributes for all-roundedness</td>
<td></td>
</tr>
<tr>
<td>• Programme Outcome 8.</td>
<td></td>
</tr>
<tr>
<td>Subject Synopsis/Indicative Syllabus</td>
<td>1. Written communication</td>
</tr>
<tr>
<td>Analysing and practising common writing functions; improving the ability of writing topic sentences and strategies for paragraph development; understanding common patterns of organisation in expository writing; taking notes from written and spoken sources; practising summarising and paraphrasing skills; improving coherence and cohesion in writing; developing revision and proofreading skills.</td>
<td></td>
</tr>
<tr>
<td>2. Spoken communication</td>
<td></td>
</tr>
<tr>
<td>Recognising the purposes of and differences between spoken and written communication in English in university study contexts; identifying and practising the verbal and non-verbal interaction strategies in oral presentations; developing and applying critical thinking skills to discussions of issues.</td>
<td></td>
</tr>
<tr>
<td>3. Language development</td>
<td></td>
</tr>
<tr>
<td>Improving and extending relevant features of grammar, vocabulary and pronunciation.</td>
<td></td>
</tr>
<tr>
<td>Teaching/Learning Methodology</td>
<td>The study method is primarily seminar-based. Following a blended delivery approach, activities include teacher input as well as in- and out-of-class individual and group work involving drafting and evaluating texts, mini-presentations, discussions and simulations. The process approach to writing is adopted, and students make use of elearning resources to engage in academic discussions and to reflect on their learning.</td>
</tr>
</tbody>
</table>
Learning materials developed by the English Language Centre are used throughout the course. Students will be referred to learning resources on the Internet and in the ELC’s Centre for Independent Language Learning. Additional reference materials will be recommended as required.

### Assessment Methods in Alignment with Intended Subject Learning Outcomes

<table>
<thead>
<tr>
<th>Specific assessment methods/tasks</th>
<th>% weighting</th>
<th>Intended subject learning outcomes to be assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Academic essay 1</td>
<td>30%</td>
<td>✓  ✓  ✓</td>
</tr>
<tr>
<td>2. Academic essay 2</td>
<td>30%</td>
<td>✓  ✓  ✓</td>
</tr>
<tr>
<td>3. Oral presentation</td>
<td>40%</td>
<td>✓  ✓  ✓</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

**Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:**

Assessments 1 and 2 necessitate achievement of LOs (1), (2) and (3) in order to write an effective academic essay via the process of extending and improving the essay for assessment 1. In order for students to present an effective academic oral presentation, as demanded in assessment 3, they will need to read, note and synthesise from a variety of sources, and refer to those sources in their presentation (ref. LOs (1), (2) and (4)).

In addition to these assessments, students are required to complete further language training, through web-based language work, reading tasks and online reflections. The additional language training offered in online tasks is aligned with all the four LOs. In some of the tasks, students need to critically read and summarise information contained in a variety of sources, as required in LOs (1) and (2).

### Student Study Effort Expected

**Class contact:**

- Seminars 42 Hours

**Other student study effort:**

- Self study/preparation 84 Hours

**Total student study effort** 126 Hours

### Reading List and References

**Course material**

Learning materials developed by the English Language Centre

**Recommended references**


### Last Updated

Aug 2013

### Prepared by

English Language Centre
<table>
<thead>
<tr>
<th><strong>Subject Code</strong></th>
<th>ELC1014</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subject Title</strong></td>
<td>Advanced English for University Studies</td>
</tr>
<tr>
<td><strong>Credit Value</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Level</strong></td>
<td>1</td>
</tr>
<tr>
<td><strong>Pre-requisite</strong></td>
<td>ELC1013 English for University Studies (unless exempted)</td>
</tr>
<tr>
<td><strong>Objectives</strong></td>
<td>This subject aims to help students study effectively in the University's English medium learning environment, and to improve and develop their English language proficiency within a framework of university study contexts.</td>
</tr>
<tr>
<td><strong>Intended Subject Learning Outcomes</strong></td>
<td>Upon successful completion of the subject, students will be able to:</td>
</tr>
<tr>
<td></td>
<td>1. use academic sources appropriately and effectively</td>
</tr>
<tr>
<td></td>
<td>2. plan, write and revise position argument essays (i.e. one-sided discursive essays) with appropriate referencing; and</td>
</tr>
<tr>
<td></td>
<td>3. present views effectively and critically in spoken communication</td>
</tr>
<tr>
<td></td>
<td>To achieve the above outcomes, students are expected to use language and text structure appropriate to the context, select information critically, and present and support stance and opinion logically and persuasively.</td>
</tr>
<tr>
<td><strong>Contribution of the Subject to the Attainment of the Programme Outcomes</strong></td>
<td>Programme Outcomes:</td>
</tr>
<tr>
<td></td>
<td>Category B: Attributes for all-roundedness</td>
</tr>
<tr>
<td></td>
<td>• Programme Outcome 8.</td>
</tr>
<tr>
<td><strong>Subject Synopsis/Indicative Syllabus</strong></td>
<td>1. Written communication</td>
</tr>
<tr>
<td></td>
<td>Developing logical and persuasive arguments; applying a variety of organisation patterns in discursive writing, including the writing of explanatory and evaluative texts; selecting information critically; supporting stance; maintaining cohesion and coherence in discursive writing; achieving appropriate style and tone.</td>
</tr>
<tr>
<td></td>
<td>2. Spoken communication</td>
</tr>
<tr>
<td></td>
<td>Enhancing and practising the specific oral and aural skills required to participate effectively in academic discussions and to present views in a formal academic context.</td>
</tr>
<tr>
<td></td>
<td>3. Reading and listening</td>
</tr>
<tr>
<td></td>
<td>Understanding the content and structure of information in oral and written texts; comprehending, inferring and evaluating messages and attitude.</td>
</tr>
<tr>
<td></td>
<td>4. Language development</td>
</tr>
<tr>
<td></td>
<td>Improving and extending relevant features of grammar, vocabulary and pronunciation.</td>
</tr>
<tr>
<td><strong>Teaching/Learning Methodology</strong></td>
<td>The study method is primarily seminar-based. Following a blended delivery approach, activities include teacher input as well as in- and out-of-class individual and group work involving drafting and evaluating texts, mini-presentations, discussions and simulations. The process approach to writing is adopted, and students make use of elearning resources to engage in academic discussions and to reflect on their learning.</td>
</tr>
<tr>
<td></td>
<td>Learning materials developed by the English Language Centre are used throughout the course. Students will be referred to learning resources on the Internet and in the ELC’s Centre for Independent Language Learning.</td>
</tr>
</tbody>
</table>
Additional reference materials will be recommended as required.

<table>
<thead>
<tr>
<th>Assessment Methods in Alignment with Intended Subject Learning Outcomes</th>
<th>Specific assessment methods/tasks</th>
<th>% weighting</th>
<th>Intended subject learning outcomes to be assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>1. Position Argument Essay (draft)</td>
<td>20%</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>2. Position Argument Essay (final)</td>
<td>45%</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>3. Academic presentation &amp; discussion</td>
<td>35%</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Total</td>
<td>100 %</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

Assessments 1 and 2 assess the students’ abilities in producing a coherent academic text which requires effective use and referencing of sources (ref. LOs (1) and (2)). Assessment 3 assesses their abilities to plan and present their ideas, in two different academic contexts (ref. LOs (1) and (3)).

In addition to these assessments, students are required to complete further language training through working on their ePortfolio throughout the course. This will involve students in reading texts and subsequent online writing and discussion that will parallel the process writing approach involved in assessments 1 and 2, and align with all three LOs.

<table>
<thead>
<tr>
<th>Student Study Effort Expected</th>
<th>Class contact:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Seminars</td>
</tr>
<tr>
<td></td>
<td>Other student study effort:</td>
</tr>
<tr>
<td></td>
<td>• Self study/preparation</td>
</tr>
<tr>
<td></td>
<td>Total student study effort:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reading List and References</th>
<th>Course material</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Learning materials developed by the English Language Centre</td>
</tr>
<tr>
<td></td>
<td>Recommended references</td>
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</table>

<table>
<thead>
<tr>
<th>Last Updated</th>
<th>Aug 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepared by</td>
<td>English Language Centre</td>
</tr>
<tr>
<td>Subject Code</td>
<td>AMA2111</td>
</tr>
<tr>
<td>--------------</td>
<td>---------</td>
</tr>
<tr>
<td>Subject Title</td>
<td>Mathematics I</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Level</td>
<td>2</td>
</tr>
<tr>
<td>Pre-requisite</td>
<td>Calculus I (AMA1101) or Calculus IA (AMA1102)</td>
</tr>
<tr>
<td>Co-requisite/Exclusion</td>
<td>Nil</td>
</tr>
</tbody>
</table>

### Objectives
This subject aims to introduce students to the basic principles and techniques of engineering mathematics. Emphasis will be on the understanding of fundamental concepts as well as applications of mathematical methods in solving practical problems in science and engineering.

### Intended Subject Learning Outcomes
Upon completion of the subject, students will be able to:
1. apply mathematical reasoning to analyze essential features of different problems in science and engineering;
2. extend their knowledge of mathematical and numerical techniques and adapt known solutions in various situations;
3. develop and extrapolate the mathematical concepts in synthesizing and solving new problems;
4. demonstrate abilities of logical and analytical thinking;
5. search for useful information in the process of problem solving.

### Contribution of the Subject to the Attainment of the Programme Outcomes

#### Programme Outcomes:

**Category A: Professional/academic knowledge and skills**
- Programme Outcomes 1, 2, 4 and 5.

**Category B: Attributes for all-roundedness**
- Programme Outcomes 9 and 10.

### Subject Synopsis/Indicative Syllabus

1. **Algebra of complex numbers**
   Complex numbers, geometric representation, complex exponential functions, n-th roots of a complex number.

2. **Linear algebra**
   Review of matrices, determinants and systems of linear equations, vector spaces, inner product and orthogonality, eigenvalues and eigenvectors, applications.

3. **Ordinary differential equations**
   ODE of first and second order, linear systems, Laplace transforms, Convolution theorem, applications to mechanical vibrations and simple circuits.

4. **Differential calculus of functions of several variables**
   Partial derivatives, total differential, chain rule, Taylor’s expansion, maxima and minima, directional derivatives, Lagrange multipliers, implicit differentiation, applications.

### Teaching/Learning Methodology
The subject will be delivered mainly through lectures and tutorials. The lectures aim to provide the students with an integrated knowledge required for the understanding and application of mathematical concepts and techniques. Tutorials will mainly be used to develop students’ problem solving ability.
### Assessment Methods in Alignment with Intended Subject Learning Outcomes

<table>
<thead>
<tr>
<th>Specific assessment methods/tasks</th>
<th>% weighting</th>
<th>Intended subject learning outcomes to be assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Homework, quizzes and mid-term test</td>
<td>40%</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>2. Examination</td>
<td>60%</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td><strong>1 2 3 4 5</strong></td>
</tr>
</tbody>
</table>

Continuous Assessment comprises of assignments, in-class quizzes, online quizzes and a mid-term test. An examination is held at the end of the semester.

Questions used in assignments, quizzes, tests and examinations are used to assess students’ level of understanding of the basic concepts and their ability to use mathematical techniques in solving problems in science and engineering.

To pass this subject, students are required to obtain grade D or above in both the continuous assessment and the examination components.

**Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:**

The subject focuses on understanding of basic concepts and application of techniques in engineering mathematics. As such, an assessment method based mainly on examinations/tests/quizzes is considered appropriate. Furthermore, students are required to submit homework assignments regularly in order to allow subject lecturers to keep track of students’ progress in the course.

### Student Study Effort Expected

#### Class contact:

- Lecture: 28 Hours
- Tutorial: 14 Hours
- Mid-term test and examination

#### Other student study effort: 5 hours

- Assignments and Self study: 73 Hours

**Total student study effort:** 120 Hours

### Reading List and References


### Last Updated

Aug 2013

### Prepared by

AMA Department
<table>
<thead>
<tr>
<th>Subject Code</th>
<th>EIE2101</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Title</td>
<td>Basic Circuit Analysis</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Level</td>
<td>2</td>
</tr>
<tr>
<td>Pre-requisite/ Co-requisite/ Exclusion</td>
<td>Nil</td>
</tr>
</tbody>
</table>

**Objectives**

1. Introduce fundamental circuit theory.
2. Develop ability for solving problems involving electric circuits.
3. Develop skills for experimentation on electric circuits.
4. Impart relevant skills and knowledge for independent learning of other subjects that require such skills and knowledge.

**Intended Subject Learning Outcomes**

Upon completion of the subject, students will be able to:

**Category A: Professional/academic knowledge and skills**

1. Acquire a good understanding of fundamental circuit theory.
2. Solve simple problems in electric circuits.
3. Use suitable instrumentation to carry out experimental investigations to validate the theoretical investigations.

**Category B: Attributes for all-roundedness**

4. Search for useful information in solving problems in electric circuits.

**Contribution of the Subject to the Attainment of the Programme Outcomes**

Programme Outcomes:

**Category A: Professional/academic knowledge and skills**

- Programme Outcome 1: This subject contributes to the programme outcome through teaching of the fundamental principles and applications of electronics circuits.
- Programme Outcome 2: This subject contributes to the programme outcome through designing of electronic circuits and providing the students with an opportunity to conduct experiments, analyze, and interpret data.

**Subject Synopsis/Indicative Syllabus**

**Syllabus:**

1. **DC Circuits**

2. **Capacitance, Inductance and First Order Transient**

3. **Introduction to Transformers**
   - Concept of ideal transformer (assuming sinusoidal voltages and currents). Dot convention. Physical transformer as ideal transformer with leakage and
magnetizing inductances. Applications in galvanic isolation and voltage/current level conversion.

4. Steady-state Analysis of AC Circuits

5. Formulation of State Equations for General Dynamic Circuits

6. Operational Amplifiers
   Ideal operational amplifier. Defining characteristics (i.e., infinite gain and infinite input resistance). Op-amp circuits: inverting amplifier, non-inverting amplifier, summer, difference amplifier, integrator and differentiator. Applications: instrumentation amplifier; current-to-voltage and voltage-to-current converters.

Laboratory Experiments:

1. Introduction to laboratory instrumentation / Thévenin and Norton theorems
2. First order transient
3. Use of operational amplifiers.

<table>
<thead>
<tr>
<th>Teaching/ Learning Method</th>
<th>Intended Subject Learning Outcome</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures, supplemented with interactive questions and answers</td>
<td>1, 2, 4</td>
<td>In lectures, students are introduced to the knowledge of the subject, and comprehension is strengthened with interactive Q&amp;A.</td>
</tr>
<tr>
<td>Practice classes, where problems are discussed and are given to students for them to solve</td>
<td>1, 2, 4</td>
<td>In practice classes, students apply what they have learnt in solving the problems given by the tutor.</td>
</tr>
<tr>
<td>Laboratory sessions, where students will perform experimental verifications. They will have to record results and write a report on one of the experiments.</td>
<td>2, 3, 4</td>
<td>Students acquire hands-on experience in using electronic equipment and apply what they have learnt in lectures/tutorials to experimentally validate the theoretical investigations.</td>
</tr>
<tr>
<td>Assignments</td>
<td>1, 2, 3, 4</td>
<td>Through working assignments, students will develop a firm understanding and comprehension of the knowledge taught.</td>
</tr>
<tr>
<td>Assessment Methods in Alignment with Intended Subject Learning Outcomes</td>
<td>Specific Assessment Methods/Task</td>
<td>% Weighting</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>1. Continuous Assessment (Total 40%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Assignments 10%</td>
<td>✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td></td>
<td>• Laboratory works and reports 10%</td>
<td>✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td></td>
<td>• Mid-semester test 10%</td>
<td>✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td></td>
<td>• End-of-semester test 10%</td>
<td>✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td></td>
<td>2. Examination 60%</td>
<td>✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

<table>
<thead>
<tr>
<th>Specific Assessment Methods/Tasks</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments</td>
<td>Assignments are given to students to assess their competence level of knowledge and comprehension. The criteria (i.e. what to be demonstrated) and level (i.e. the extent) of achievement will be graded according to six levels: (A+ and A), Good (B+ and B), Satisfactory (C+ and C), Marginal (D) and Failure (F). These will be made known to the students before an assignment is given. Feedback about their performance will be given promptly to students to help them improve their learning.</td>
</tr>
<tr>
<td>Laboratory works and reports</td>
<td>Students will be required to perform three experiments and submit a report on one of the experiments. Expectation and grading criteria will be given as in the case of assignments.</td>
</tr>
<tr>
<td>Mid-semester test</td>
<td>There will be a mid-semester test to evaluate students’ achievement of all the learning outcomes and give feedback to them for prompt improvement. Expectation and grading criteria will be given as in the case of assignments.</td>
</tr>
<tr>
<td>End-of-semester test and Examination</td>
<td>There will be an end-of-semester test and examination to assess students’ achievement of all the learning outcomes. These are mainly summative in nature. Expectation and grading criteria will be given as in the case of assignments.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student Study Effort Expected</th>
<th>Class contact (time-tabled):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Lecture 24 Hours</td>
</tr>
<tr>
<td></td>
<td>• Tutorial/Laboratory/Practice Classes 18 hours</td>
</tr>
</tbody>
</table>
## Other student study effort:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture: preview/review of notes; homework/assignment; preparation for test/quizzes/examination</td>
<td>36</td>
</tr>
<tr>
<td>Tutorial/Laboratory/Practice Classes: preview of materials, revision and/or reports writing</td>
<td>27</td>
</tr>
</tbody>
</table>

**Total student study effort:** 105 Hours

## Reading List and References

### Textbook:

### References:

## Last Updated
Aug 2013

## Prepared by
Dr Martin Chow
### Subject Description Form

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>EIE2103</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Title</td>
<td>Basic Electronics</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Level</td>
<td>2</td>
</tr>
<tr>
<td>Pre-requisite</td>
<td>Basic Circuit Analysis (EIE2101)</td>
</tr>
<tr>
<td>Co-requisite/ Exclusion</td>
<td>Nil</td>
</tr>
</tbody>
</table>

#### Objectives
To introduce the operating principles of electronic circuits. Several classes of electronic circuits will be covered in this subject – diode circuits, BJT transistor circuits, FET transistor circuits. An introduction to power amplifiers will also be given.

#### Intended Subject Learning Outcomes
Upon completion of the subject, students will be able to:

**Category A: Professional/academic knowledge and skills**
1. Acquire some understanding in the fundamental electric and electronics principles.
2. Solve basic problems in electric and electronic circuits.
3. Acquire better skills in performing the laboratory experiments.

**Category B: Attributes for all-roundedness**
4. Perform independent learning in basic electric and electronic principles.
5. Work as a team in laboratory sessions.

#### Contribution of the Subject to the Attainment of the Programme Outcomes
**Programme Outcomes:**

**Category A: Professional/academic knowledge and skills**
- Programme Outcome 1: This subject contributes to the programme outcome through teaching of the fundamental principles and applications of electronics circuits and providing the students with an opportunity to practice the application of knowledge.
- Programme Outcome 2: This subject contributes to the programme outcome through analysis of electronic circuits and providing the students with an opportunity to conduct experiments, analyze, and interpret data.

#### Subject Synopsis/Indicative Syllabus
**Syllabus:**

1. **Load Line Analysis and Diode Circuits**
   - I-V characteristics of diodes and general nonlinear components. DC solution based on load line construction. Practical diode circuits: rectifier circuits, clipping and clamping circuits.

2. **Transistors and Biasing Circuits**

3. **Transistor Amplifiers and Small-signal Concepts**

4. **Introduction to Frequency Domain Analysis**
Transfer functions from ac circuits in terms of \( j\omega \). Introduction to frequency domain, from \( j\omega \) to \( s \). General s-domain transfer functions. Simple first-order filter circuits. Introducing concepts of pole, corner frequency, bandwidth. For sinusoidal driving sources, use of \( j\omega \) axis for magnitude and phase plots. Extension to asymptotic plots and hence Bode plots.

5. **Fundamentals of Power Amplifiers**
   Concept of conversion efficiency. Class A, Class B & Class AB operations of power amplifiers and the related circuits.

**Laboratory Experiments:**
Students are required to conduct some of the following experiments:-
1. DC transistor biasing/load line and diode clamping circuits.
2. Transistor amplifier circuits.
3. Design of a simple transistor amplifier.
4. OCL class AB power amplifier.

<table>
<thead>
<tr>
<th>Teaching/ Learning Methodology</th>
<th>Teaching and Learning Method</th>
<th>Intended Subject Learning Outcome</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures, supplemented with interactive questions and answers</td>
<td>1, 2, 4</td>
<td>In lectures, students are introduced to the knowledge of the subject, and comprehension is strengthened with interactive Q&amp;A.</td>
<td></td>
</tr>
<tr>
<td>Practice classes, where problems are discussed and are given to students for them to solve</td>
<td>1, 2, 4</td>
<td>In practice classes, students apply what they have learnt in solving the problems given by the tutor.</td>
<td></td>
</tr>
<tr>
<td>Laboratory sessions, where students will perform experimental verifications. They will have to record results and write a report on one of the experiments.</td>
<td>2, 3, 5</td>
<td>Students acquire hands-on experience in using electronic equipment and apply what they have learnt in lectures/tutorials to experimentally validate the theoretical investigations.</td>
<td></td>
</tr>
<tr>
<td>Assignments, mini-project</td>
<td>1, 2, 3, 4</td>
<td>Through working assignments, mini-project, students will develop a firm understanding and comprehension of the knowledge taught.</td>
<td></td>
</tr>
</tbody>
</table>
### Assessment Methods in Alignment with Intended Subject Learning Outcomes

<table>
<thead>
<tr>
<th>Specific Assessment Methods/Task</th>
<th>% Weighting</th>
<th>Intended Subject Learning Outcomes to be Assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1. Continuous Assessment</td>
<td>40%</td>
<td>✓</td>
</tr>
<tr>
<td>2. Examination</td>
<td>60%</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

<table>
<thead>
<tr>
<th>Specific Assessment Methods/Tasks</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments</td>
<td>Assignments are given to students to assess their competence level of <em>knowledge</em> and <em>comprehension</em>. The criteria (i.e. <em>what</em> to be demonstrated) and level (i.e. the <em>extent</em>) of achievement will be graded according to six levels: (A+ and A), Good (B+ and B), Satisfactory (C+ and C), Marginal (D) and Failure (F). These will be made known to the students before an assignment is given. Feedback about their performance will be given promptly to students to help them improvement their learning.</td>
</tr>
<tr>
<td>Laboratory works and reports</td>
<td>Students will be required to perform four experiments and submit a report on one of the experiments. Expectation and grading criteria will be given as in the case of assignments.</td>
</tr>
<tr>
<td>Mid-semester test</td>
<td>There will be a mid-semester test to evaluate students’ achievement of all the learning outcomes and give feedback to them for prompt improvement. Expectation and grading criteria will be given as in the case of assignments.</td>
</tr>
<tr>
<td>End-of-semester test and Examination</td>
<td>There will be an end-of-semester test and examination to assess students’ achievement of all the learning outcomes. These are mainly summative in nature. Expectation and grading criteria will be given as in the case of assignments.</td>
</tr>
</tbody>
</table>

### Student Study Effort Expected

<table>
<thead>
<tr>
<th>Class contact (time-tabled):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
</tr>
<tr>
<td>Tutorial/Laboratory/Practice Classes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other student study effort:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture: preview/review of notes; homework/assignment; preparation for test/quizzes/examination</td>
</tr>
<tr>
<td>Tutorial/Laboratory/Practice Classes: preview of materials, revision and/or reports writing</td>
</tr>
</tbody>
</table>

**Total student study effort:** 105 Hours
<table>
<thead>
<tr>
<th>Reading List and References</th>
<th>Textbook:</th>
</tr>
</thead>
<tbody>
<tr>
<td>References</td>
<td>References:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Last Updated</th>
<th>Aug 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepared by</td>
<td>Dr Martin Chow</td>
</tr>
</tbody>
</table>
### Subject Description Form

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>EIE2261</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subject Title</strong></td>
<td>Logic Design</td>
</tr>
<tr>
<td><strong>Credit Value</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Level</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>Pre-requisite/ Co-requisite/ Exclusion</strong></td>
<td>Nil</td>
</tr>
</tbody>
</table>

#### Objectives

To provide students with a broad view in digital logic design and enable them to gain understanding and skills that will be used in later computer-related courses.

#### Intended Subject Learning Outcomes

Upon completion of the subject, students will be able to:

**Category A: Professional/academic knowledge and skills**

1. Understand the fundamentals of digital systems and associated technologies.
2. Analyse and design simple systems related to digital logic.
3. Apply logic design techniques to construct digital systems with programmable logic devices and microprocessors, and appreciate the use of them.
4. Appreciate the importance of creativity and critical thinking on finding "good" solutions or making "good" designs.

**Category B: Attributes for all-roundedness**

5. Think critically.

#### Contribution of the Subject to the Attainment of the Programme Outcomes

**Programme Outcomes:**

**Category A: Professional/academic knowledge and skills**

- Programme Outcome 1: This subject contributes to the programme outcome through teaching of the fundamentals of logic circuits and providing the students with an opportunity to practice the application of knowledge.
- Programme Outcome 4: This subject contributes to the programme outcome by providing students with an opportunity to apply modern development tools for virtual prototyping.
- Programme Outcome 5: This subject contributes to the programme outcome by providing students with an opportunity to conduct experiments using simulation tools.

**Category B: Attributes for all-roundedness**

- Programme Outcome 10: This subject contributes to the programme outcome by providing students with an opportunity to think critically and creatively in conducting experiments.

#### Subject Synopsis/Indicative Syllabus

**Syllabus:**

1. **Logic Circuit and ICs**
   - 1.1 Decoders and encoders
   - 1.2 Multiplexers and demultiplexers
   - 1.3 Binary adders, binary adder-subtractors
   - 1.4 Binary multipliers
   - 1.5 Sequential circuit analysis and design
   - 1.6 Registers and counters
   - 1.7 HDL representation.

2. **Memory and Programmable Logic Devices**
   - 2.1 RAM: Write and read operations, timing waveforms, RAM integrated
circuits, three-state buffers, DRAM ICs
2.2 Programmable logic technologies
2.3 ROM, PLA and PAL
2.4 VLSI programmable logic devices: Xilinx FPGA.

3. Microprocessor
3.1 Register transfer operations
3.2 Microoperations
3.3 Bus-based transfer
3.4 ALU
3.5 Shifter
3.6 Datapath representation
3.7 Control word
3.8 Control unit
3.9 Hardwired control
3.10 Basic Assembly Language Programming.

Laboratory Experiment:
1. Basic logic gates and their applications
2. Hardware description language and programmable logic devices

<table>
<thead>
<tr>
<th>Teaching/ Learning Methodology</th>
<th>Teaching and Learning Method</th>
<th>Intended Subject Learning Outcome</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>1, 2, 3, 4</td>
<td>Fundamental principles and key concepts of the subject are delivered to students.</td>
<td></td>
</tr>
<tr>
<td>Tutorials</td>
<td>1, 2, 3, 4, 5</td>
<td>Supplementary to lectures and are conducted with smaller class size. Students will be able to clarify concepts and to have a deeper understanding of the lecture materials. Problems and application examples are given and discussed.</td>
<td></td>
</tr>
<tr>
<td>Laboratory sessions</td>
<td>1, 2, 3, 4, 5</td>
<td>students will make use of the software and hardware tools to develop simple digital systems, perform simulations</td>
<td></td>
</tr>
</tbody>
</table>

Assessment Methods in Alignment with Intended Subject Learning Outcomes

<table>
<thead>
<tr>
<th>Specific Assessment Methods/Tasks</th>
<th>% Weighting</th>
<th>Intended Subject Learning Outcomes to be Assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Continuous Assessment</td>
<td>40%</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>• Assignments</td>
<td>✓</td>
<td>✓ ✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>• Tests</td>
<td>✓</td>
<td>✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>• Laboratory sessions</td>
<td>✓</td>
<td>✓ ✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>2. Examination</td>
<td>60%</td>
<td>✓ ✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>
Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

<table>
<thead>
<tr>
<th>Specific Assessment Methods/Tasks</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments</td>
<td>Enhance the understanding of the taught materials in the lectures.</td>
</tr>
<tr>
<td>Tests and examination</td>
<td>End-of chapter type problems are used frequently to evaluate students’ ability in applying concepts and skills learned in class. The students are also needed to think critically and creatively in the process of solving problems.</td>
</tr>
<tr>
<td>Laboratory sessions</td>
<td>Each student is required to do a demonstration and submit a lab report after the laboratory.</td>
</tr>
</tbody>
</table>

Student Study Effort Expected

Class contact (time-tabled):
- Lecture: 24 Hours
- Tutorial/Laboratory/Practice Classes: 18 hours

Other student study effort:
- Lecture: preview/review of notes; homework/assignment; preparation for test/quizzes/examination: 36 Hours
- Tutorial/Laboratory/Practice Classes: preview of materials, revision and/or reports writing: 27 Hours

Total student study effort: 105 Hours

Reading List and References

Textbooks:

Reference Books:

Last Updated: Aug 2012

Prepared by: Dr Chris Chan
<table>
<thead>
<tr>
<th><strong>Subject Description Form</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subject Code</strong></td>
</tr>
<tr>
<td><strong>Subject Title</strong></td>
</tr>
<tr>
<td><strong>Credit Value</strong></td>
</tr>
<tr>
<td><strong>Level</strong></td>
</tr>
<tr>
<td><strong>Pre-requisite/ Co-requisite/ Exclusion</strong></td>
</tr>
</tbody>
</table>
| **Objectives** | 1. To introduce the fundamental concepts of computer programming.  
2. To equip students with sound skills in C/C++ programming language.  
3. To equip students with techniques for developing structured computer programs.  
4. To demonstrate the techniques for implementing engineering applications using computer programs. |
| **Intended Subject Learning Outcomes** | Upon completion of the subject, students will be able to:  
**Category A: Professional/academic knowledge and skills**  
1. Familiarize with at least one C/C++ programming environment.  
2. Be proficient in using the basic constructs of C/C++, such as variables and expressions, looping, arrays and pointers, to develop a computer program.  
3. Able to develop a structured and documented computer program.  
4. Understand the fundamentals of object-oriented programming and be able to apply it in computer program development.  
5. Able to apply the computer programming techniques to solve practical engineering problems.  

**Category B: Attributes for all-roundedness**  
6. Solve problems by using systematic approaches.  
7. Write technical reports and present the findings.  
8. Learn team working skills. |
| **Contribution of the Subject to the Attainment of the Programme Outcomes** | Programme Outcomes:  
**Category A: Professional/academic knowledge and skills**  
- Programme Outcome 1: Understand the fundamentals of computer programming, and have the ability to apply them.  
- Programme Outcome 4: Identify, formulate and solve problems by using computer programming.  
- Programme Outcome 5: Have the ability to use tools in computer programming.  

**Category B: Attributes for all-roundedness**  
- Programme Outcome 6: Be able to work with others collaboratively in a team.  
- Programme Outcome 9: Recognize the need for life-long learning. |
| **Subject Synopsis/ Indicative Syllabus** | Syllabus:  
1. Introduction to programming  
2. **Bolts and Nuts of C/C++**
   Preprocessor, program codes, functions, comments. Variables and constants. Expressions and statements. Operators.

3. **Program Flow Control**
   If, else, switch, case. Looping – for, while, do. Functions, parameters passing, return values. Local and global variables. Scope of variables.

4. **Program Design and Debugging**

5. **Basic Object Oriented Programming**

6. **Pointer and Array**

7. **Stream I/O**

8. **Using C/C++ in Engineering Applications**
   Solving numerical problems using C/C++. Developing graphical user interfaces for Engineering applications.

---

### Teaching/ Learning Methodology

<table>
<thead>
<tr>
<th>Teaching and Learning Method</th>
<th>Intended Subject Learning Outcome</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>1, 2, 3, 4, 5</td>
<td>Fundamental principles and key concepts of the subject are delivered to the students</td>
</tr>
<tr>
<td>Tutorials</td>
<td>1, 2, 3, 4, 5, 6</td>
<td>Students will be able to clarify concepts and to have a deeper understanding of the lecture material. Problems are given to be solved.</td>
</tr>
</tbody>
</table>

### Assessment Methods in Alignment with Intended Subject Learning Outcomes

<table>
<thead>
<tr>
<th>Specific Assessment Methods/Tasks</th>
<th>% Weighting</th>
<th>Intended Subject Learning Outcomes to be Assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Continuous Assessment</strong></td>
<td>100%</td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>• Tutorial Exercises</td>
<td>✔ ✔ ✔ ✔ ✔ ✔ ✔</td>
<td></td>
</tr>
<tr>
<td>• Assignments</td>
<td>✔ ✔ ✔ ✔ ✔ ✔ ✔</td>
<td></td>
</tr>
<tr>
<td>• Mini-project</td>
<td>✔ ✔ ✔ ✔ ✔ ✔ ✔</td>
<td></td>
</tr>
<tr>
<td>• Tests</td>
<td>✔ ✔ ✔ ✔ ✔ ✔ ✔</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>
For this subject, students need to go through two 2-hours programming tests in which students will be asked, within the allowed time period, to develop a set of computer programs using C/C++ programming language to solve a problem. These two tests are worth 50% of the total marks.

Besides, students need to finish a mini-project in this subject. Students are expected to spend not less than 35 hours of self-studying in order to finish the mini-project. The mini-project is worth 30% of the total marks.

The remaining 20% of marks are allotted to assignments that will be given during and after the classes.

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

<table>
<thead>
<tr>
<th>Specific Assessment Methods/Tasks</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tutorial Exercises</td>
<td>Students will be able to clarify concepts and to have a deeper understanding of the lecture material. Problems are given to be solved.</td>
</tr>
<tr>
<td>Assignments</td>
<td>Students will be able to clarify concepts and to have a deeper understanding of the lecture material. Problems are given to be solved.</td>
</tr>
<tr>
<td>Mini-Project</td>
<td>Students will be able to clarify concepts and to have a deeper understanding of the lecture material. Problems are given to be solved.</td>
</tr>
<tr>
<td>Tests</td>
<td>Evaluate students’ ability in applying computer programming skills learned in classes. Problems are given to be solved.</td>
</tr>
</tbody>
</table>

Class contact (time-tabled):
- Lecture: 24 Hours
- Tutorial/Laboratory/Practice Classes: 18 hours

Other student study effort:
- Lecture: preview/review of notes; homework/assignment; preparation for test/quizzes/examination: 36 Hours
- Tutorial/Laboratory/Practice Classes: preview of materials, revision and/or reports writing: 27 Hours

Total student study effort: 105 Hours

Textbooks:

Reference Books:
<table>
<thead>
<tr>
<th>Last Updated</th>
<th>Aug 2012</th>
</tr>
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<tbody>
<tr>
<td>Prepared by</td>
<td>Dr Lawrence Cheung</td>
</tr>
<tr>
<td>Subject Code</td>
<td>EIE2282</td>
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<tr>
<td>Subject Title</td>
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</tr>
<tr>
<td>Credit Value</td>
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<td>Level</td>
<td>2</td>
</tr>
<tr>
<td>Pre-requisite/ Co-requisite/ Exclusion</td>
<td>Nil</td>
</tr>
</tbody>
</table>

**Objectives**

1. To provide the foundation knowledge in computer engineering, computer networking and data processing that is essential to modern information system construction.
2. To appreciate how information technologies may be deployed in solving engineering problems.

**Intended Subject Learning Outcomes**

Upon completion of the subject, students will be able to:

**Category A: Professional/academic knowledge and skills**

1. Identify different components of a computer system and understand their features.
2. Understand the basic functions of a computer operating system.
3. Understand the basic principles underlining a database system and be able to set up a simple database.
4. Develop simple Web-based database applications.
5. Have the ability to develop simple Web document.
6. Identify different components and technologies used in the Internet and understand their features.

**Category B: Attributes for all-roundedness**

7. Solve problems using systematic approaches.
8. Learn independently and be able to search for the information required.

**Contribution of the Subject to the Attainment of the Programme Outcomes**

**Programme Outcomes:**

**Category A: Professional/academic knowledge and skills**

- Programme Outcome 1: This subject contributes to the programme outcome through teaching of fundamentals of computer systems, databases, and computer networking and providing the students with an opportunity to practice the application of knowledge.

**Category B: Attributes for all-roundedness**

- Programme Outcome 8: This subject contributes to the programme outcome through in oral and/or written presentations.

**Subject Synopsis/Indicative Syllabus**

**Syllabus:**

1. **Introduction to Computer Systems**

2. **Introduction to Database Systems and Information Systems**
   Data modelling, relational database concept, structured query language
(SQL), database management, Web and database linking, database application development. Introduction to information systems. System development life cycle.

3. **Networking Essentials and the Internet**  
   Introduction to computer network: clients and servers, network devices, addressing, routing, Ethernet, Internet, TCP/IP.

**Laboratory Experiments:**

Possible Practical Works:
1. Exploring the programming model of a microprocessor
2. Installation and use of Linux
3. Database construction and application development
4. Internet programming and TCP/IP

<table>
<thead>
<tr>
<th>Teaching/Learning Methodology</th>
<th>Teaching and Learning Method</th>
<th>Intended Subject Learning Outcome</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>1,2,3,4,6</td>
<td>fundamental principles and key concepts of the subject are delivered to students</td>
<td></td>
</tr>
<tr>
<td>Tutorials</td>
<td>3,4,5,6,7,8</td>
<td>supplementary to lectures and are conducted with smaller class size; students will be able to clarify concepts and to have a deeper understanding of the lecture material; students will be given opportunities to present their ideas and solutions to quizzes and small problems; problems and application examples are given and discussed</td>
<td></td>
</tr>
<tr>
<td>Laboratory sessions</td>
<td>4,5,7</td>
<td>students will use software (e.g., Proteus and MPLAB) to program and simulate/emulate a microcontroller (e.g., PIC); students will exam and test a real-life network setup (IP address, network mask) and configure and test a web server (e.g. Apache); students will explain orally to tutors about their findings</td>
<td></td>
</tr>
<tr>
<td>Assessment Methods in Alignment with Intended Subject Learning Outcomes</td>
<td>Specific Assessment Methods/Tasks</td>
<td>% Weighting</td>
<td>Intended Subject Learning Outcomes to be Assessed (Please tick as appropriate)</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>1. Continuous Assessment (total 40%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Short quizzes</td>
<td>5%</td>
<td>✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>• 3 Assignments</td>
<td>10%</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>• 2 Tests</td>
<td>15%</td>
<td>✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>• 3 Laboratory sessions</td>
<td>10%</td>
<td>✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>2. Examination</td>
<td>60%</td>
<td>✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

<table>
<thead>
<tr>
<th>Specific Assessment Methods/Tasks</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short quizzes</td>
<td>Objective tests (e.g., multiple-choice questions, true-false, and matching items) conducted to measure the students’ ability to remember facts and figures as well as their comprehension of subject materials</td>
</tr>
<tr>
<td>Assignments, tests and examination</td>
<td>End-of chapter type problems used to evaluate students’ understanding of concepts and skills learnt in the classroom; assignments enable students to practice to solve small problems related to computer architect concepts, networking, and databases</td>
</tr>
<tr>
<td>Laboratory sessions</td>
<td>Each student is required to produce a written report; Accuracy and the presentation of the report will be assessed; Short questions based on laboratory exercises will be conducted to evaluate students technical knowledge and communication skills</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student Study Effort Expected</th>
<th>Class contact (time-tabled):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Lecture</td>
</tr>
<tr>
<td></td>
<td>• Tutorial/Laboratory/Practice Classes</td>
</tr>
<tr>
<td>Other student study effort:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Lecture: preview/ review of notes; homework/ assignment; preparation for test/ quizzes/ examination</td>
</tr>
<tr>
<td></td>
<td>• Tutorial/ Laboratory/ Practice Classes: preview of materials, revision and/or reports writing</td>
</tr>
<tr>
<td>Total student study effort:</td>
<td>105 Hours</td>
</tr>
</tbody>
</table>
### Reading List and References

<table>
<thead>
<tr>
<th>Reference Books:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Last Updated</th>
<th>Aug 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepared by</td>
<td>Dr Bonnie Law</td>
</tr>
</tbody>
</table>
### Subject Description Form

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>ELC2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Title</td>
<td>Advanced English Reading and Writing Skills</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Level</td>
<td>2</td>
</tr>
<tr>
<td>Pre-requisite</td>
<td>Advanced English for University Studies (ELC1014)</td>
</tr>
<tr>
<td>Co-requisite/ Exclusion</td>
<td>Nil</td>
</tr>
</tbody>
</table>

**Objectives**

This subject aims to help students become more effective readers. It focuses on developing students’ facility to read a variety of texts in a critical manner, and to be able to discuss the stance of the writer as well as their own reflective response to a text.

**Intended Subject Learning Outcomes**

Upon successful completion of the subject, students will be able to examine a variety of texts, including literary texts, and:

1. identify salient ideas and implications, and distinguish unsupported claims from supported ones, and fallacies from valid arguments
2. produce critical or interpretative texts which discuss and evaluate texts and writer positions
3. write and discuss critical responses to various texts

To achieve the above outcomes, students are expected to use language and text structure appropriate to the context, select information critically, and present and support stance and opinion.

**Contribution of the Subject to the Attainment of the Programme Outcomes**

Programme Outcomes:

- Category B: Attributes for all-roundedness
- Programme Outcome 8.

**Subject Synopsis/Indicative Syllabus**

1. Reading strategies
   Reading intensively to investigate a particular topic and develop an in-depth understanding of issues and stances; reading critically to extract implications, distinguish fact from opinion and fallacies from valid arguments, and to identify writers’ assumptions and purposes; analysing issues raised in texts written from different perspectives, including literary texts; reading extensively to appreciate the use of language, acquire information, promote understanding and develop empathy.

2. Writing strategies
   Presenting views and arguments to educated readers; describing and analysing the structure, meaning and characteristics of a variety of texts; discussing writer intentions.

**Teaching/Learning Methodology**

The study method is primarily seminar-based. Following a blended learning approach, activities include teacher input as well as in- and out-of-class individual and group work involving drafting and evaluating texts, mini-presentations and discussions. The process approach to writing is adopted, and students make use of elearning resources to engage in academic discussions and to reflect on their learning.

Learning materials developed by the English Language Centre are used throughout the course. Students will be referred to learning resources on
the Internet and in the ELC’s Centre for Independent Language Learning. Additional reference materials will be recommended as required.

<table>
<thead>
<tr>
<th>Assessment Methods in Alignment with Intended Subject Learning Outcomes</th>
<th>Specific assessment methods/tasks</th>
<th>% weighting</th>
<th>Intended subject learning outcomes to be assessed (Please tick as appropriate)</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Reflective writing</td>
<td>20%</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Analysing texts written in different styles and from various perspectives</td>
<td>40%</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Writing a feature article</td>
<td>40%</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

Assessment 1 requires students to write reflective responses to texts and/or books they have read, and is aligned with LO (3). Assessments 2 and 3 assess LO (1) and involve students employing effective critical reading and thinking skills. Assessment 3 requires students to conduct library/online search and produce a critical text, thus integrating the receptive critical reading skills with the production of a written text which critically assesses the texts they have read. All three assessments assess students’ abilities with regard to LO (3) but in different ways, and require students to present and support their interpretation of their reading.

<table>
<thead>
<tr>
<th>Student Study Effort Expected</th>
<th>Class contact:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>▪ Seminars</td>
</tr>
<tr>
<td>Other student study effort:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Self study/preparation</td>
</tr>
<tr>
<td>Total student study effort</td>
<td>126 Hours</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reading List and References</th>
<th>Course material</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Learning materials developed by the English Language Centre.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recommended references</th>
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</tr>
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</table>

<table>
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<tr>
<th>Last Updated</th>
<th>Aug 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepared by</td>
<td>English Language Centre</td>
</tr>
<tr>
<td>Subject Code</td>
<td>ELC2012</td>
</tr>
<tr>
<td>---------------</td>
<td>---------</td>
</tr>
<tr>
<td>Subject Title</td>
<td>Persuasive Communication</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Level</td>
<td>2</td>
</tr>
<tr>
<td>Pre-requisite</td>
<td>Advanced English for University Studies (ELC1014)</td>
</tr>
<tr>
<td>Co-requisite/ Exclusion</td>
<td>Nil</td>
</tr>
</tbody>
</table>

### Objectives

This subject aims to help students become more persuasive communicators in a variety of contexts that they may encounter at university and in the workplace.

### Intended Subject Learning Outcomes

Upon successful completion of the subject, students will be able to

1. write persuasive texts intended for a variety of audiences
2. communicate persuasively in oral presentations
3. make persuasive arguments in formal discussions

To achieve the above outcomes, students are expected to use language and text structure appropriate to the context, select information critically, and present and support stance and opinion.

### Contribution of the Subject to the Attainment of the Programme Outcomes

Programme Outcomes:

- Category B: Attributes for all-roundedness
  - Programme Outcome 8.

### Subject Synopsis/Indicative Syllabus

1. Preparing for effective persuasion
   Assessing the situation; selecting relevant content; organising ideas and information; selecting an appropriate tone, distance and level of formality; using appropriate visual imagery to support the communication of messages.

2. Persuasion through writing
   Developing and practising appropriate language, tone, style and structure; achieving cohesion and coherence.

3. Persuasion through speaking
   Developing and practising appropriate verbal and non-verbal skills for persuasive oral communication; improving and extending relevant pronunciation features, including articulation, pausing, intonation, word stress and sentence stress.

### Teaching/Learning Methodology

The study method is primarily seminar-based. Following a blended delivery approach, activities include teacher input as well as individual and group work involving reading and appreciating texts, discussions and presentations of ideas.

Learning materials developed by the English Language Centre are used throughout the course. Students will be referred to learning resources on the Internet and in the ELC’s Centre for Independent Language Learning. Additional reference materials will be recommended as required.
### Assessment Methods in Alignment with Intended Subject Learning Outcomes

<table>
<thead>
<tr>
<th>Specific assessment methods/tasks</th>
<th>% weighting</th>
<th>Intended subject learning outcomes to be assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Persuasive written text</td>
<td>34%</td>
<td>✓</td>
</tr>
<tr>
<td>2. Group presentation</td>
<td>33%</td>
<td>✓</td>
</tr>
<tr>
<td>3. Debate</td>
<td>33%</td>
<td>✓ ✓</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

Assessment 1 concentrates on persuasive techniques in writing and assesses students' achievement of LO (1). Assessment 2 is a presentation that covers both persuasive speaking and the use of visual aids to complement and reinforce the message; and is aligned with intended LO (2). Assessment 3 assesses students’ performance in a different aspect of persuasion, the formal debate, in which students need to explain their perspective, defend arguments and persuade the audience. It aligns with intended LOs (1) and (2).

### Student Study Effort Expected

<table>
<thead>
<tr>
<th>Class contact:</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Seminars</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other student study effort:</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Self study/preparation</td>
</tr>
</tbody>
</table>

Total student study effort 126 Hours

### Reading List and References

**Course material**
Learning materials developed by the English Language Centre.

**Recommended references**

### Last Updated

Aug 2013

### Prepared by

English Language Centre
## Subject Description Form

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>ELC2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Title</td>
<td>English in Literature and Film</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Level</td>
<td>2</td>
</tr>
<tr>
<td>Pre-requisite / Pre-requisite: Advanced English for University Studies (ELC1014)</td>
<td></td>
</tr>
<tr>
<td>Co-requisite/ Exclusion</td>
<td>Nil</td>
</tr>
</tbody>
</table>

### Objectives
This subject aims to introduce students to a range of literary genres in English as well as to enable them to consider differences in media representations of genres, and to appreciate and negotiate the meanings of a variety of literary texts.

It is also intended that the subject will help students further develop literacy, as well as higher order thinking and life-long learning skills.

### Intended Subject Learning Outcomes
Upon successful completion of the subject, students will be able to:

1. examine and analyse literary texts on various themes from different perspectives
2. discuss literary techniques employed by writers
3. appreciate and articulate differences in textual and visual media representations

To achieve the above outcomes, students are expected to use language and text structure appropriate to the context, select information critically, and present and support stance and opinion.

### Contribution of the Subject to the Attainment of the Programme Outcomes

#### Programme Outcomes:

Category B: Attributes for all-roundedness
- Programme Outcome 8.

#### Subject Synopsis/Indicative Syllabus

1. Written communication
   Describing and interpreting content and language in literary texts; employing appropriate grammatical structures and vocabulary.

2. Spoken communication
   Presenting critical evaluation of literary works effectively and convincingly.

3. Reading
   Developing understanding of and competence in using literary devices such as metaphor, simile and symbolism, via reading literary texts and viewing film versions.

4. Language development
   Improving fluency and pronunciation, and extending grammatical and lexical competence.

### Teaching/Learning Methodology
The study method is primarily seminar-based. Following a blended delivery approach, activities include teacher input as well as in- and out-of-class individual and group work involving listening to and viewing a variety of audio-visual sources, reading and drafting texts, conducting internet research, making mini-presentations, participating in discussions, and comparing various representations of literature. Students will make use of elearning...
resources and web-based work to further improve their English literacy skills. Learning materials developed by the English Language Centre are used throughout the course. Students will be referred to learning resources on the Internet and in the ELC's Centre for Independent Language Learning. Additional reference materials will be recommended as required.

<table>
<thead>
<tr>
<th>Assessment Methods in Alignment with Intended Subject Learning Outcomes</th>
<th>Specific assessment methods/tasks</th>
<th>% weighting</th>
<th>Intended subject learning outcomes to be assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Individual paper</td>
<td>30%</td>
<td>✓ ✓</td>
</tr>
<tr>
<td></td>
<td>2. Written test</td>
<td>40%</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td></td>
<td>3. Group project</td>
<td>30%</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

In assessment 1, students are required to write an individual paper in which they critically reflect on their reading of prose, and by so doing, demonstrate their achievement of LO (1). Assessments 2 and 3 are aligned with all three LOs. Assessment 2 assesses students’ understanding of a literary drama and requires comparison of the merits of its textual and theatrical versions. Assessment 3 is a group project that requires reading and interpretation of more creative literature and presentation of audio-visual sources.

<table>
<thead>
<tr>
<th>Student Study Effort Expected</th>
<th>Class contact:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Seminar</td>
</tr>
</tbody>
</table>

| Other student study effort: |
|---|---|
| | 1. Self study/preparation | 84 Hours |

Total student study effort 126 Hours

<table>
<thead>
<tr>
<th>Reading List and References</th>
<th>Required reading</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The PolyU library retains either hardcopies or electronic copies of the following titles. The titles can also be found online.</td>
</tr>
</tbody>
</table>

Other readings will be specified by the ELC teacher, and may contain short
<table>
<thead>
<tr>
<th>fiction, novelettes, plays and poetry.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Last Updated</strong></td>
</tr>
<tr>
<td>Aug 2013</td>
</tr>
<tr>
<td><strong>Prepared by</strong></td>
</tr>
<tr>
<td>English Language Centre</td>
</tr>
</tbody>
</table>
**Subject Description Form**

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>IC2111</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Title</td>
<td>Industrial Centre Training I for EIE</td>
</tr>
<tr>
<td>Credit Value</td>
<td>5 training credits</td>
</tr>
<tr>
<td>Level</td>
<td>2</td>
</tr>
<tr>
<td>Pre-requisite/ Co-requisite/ Exclusion</td>
<td>Nil</td>
</tr>
<tr>
<td>Objectives</td>
<td>The objective of this subject is to equip students with the best practical training that are fundamental and essential in their study and professional practice of electronic and information engineering (EIE).</td>
</tr>
</tbody>
</table>

**Intended Subject Learning Outcomes**

Upon completion of the subject, students will be able to:

1. design and fabricate simple electronic equipment prototype for demonstration, development and experimentation purposes;
2. specify and explain contemporary pragmatic manufacturing processes, interconnects and assembly methods for electronic equipment fabrication;
3. prescribe and perform parametric test and analysis and the troubleshooting of simple electronic circuits with the application of basic and virtual electronic instruments;
4. design and verify simple electronic equipment with embedded system;
5. design and create commercial grade, Web based information system for information sharing, business control and logistics;
6. recognize training forms an important part for a professional engineer career and the needs for multi-disciplinary training and continue professional development in professional engineering practice.

**Contribution of the Subject to the Attainment of the Programme Outcomes**

Programme Outcomes:
This subject contributes to the programme outcomes 1, 5, 8 and 10 through practical training in electronic and information engineering.

**Category A: Professional/academic knowledge and skills**

- Programme Outcomes 1 and 5: This subject contributes to the programme outcome through practical training and practice in the design, development, fabrication, test and troubleshooting of electronic or information equipment and products with hardware and software tools.

**Category B: Attributes for all-roundedness**

- Programme Outcome 8: This subject contributes to the programme outcome through induction on the importance of training, responsibility and ethics for a professional engineer.
- Programme Outcome 10: This subject contributes to the programme outcome through induction and practical training that could bring up the awareness and cognition in self-learning and life-long learning as demanded for a professional career.

**Subject Synopsis/Indicative Syllabus**

<table>
<thead>
<tr>
<th>Syllabus:</th>
</tr>
</thead>
</table>
| 1 **TM1101 – Basic Electronic Practice for Electronics and Information Engineering**  
1.1 Introduction to common electronics parts, use of basic test instruments, best practice and basic troubleshooting techniques, electronic workshop safety.  
1.2 Soldering and de-soldering techniques, mounting and installation of electronic circuits, wiring of subassemblies. |
| 1 | PCB design, hands on practice on PCB circuit design with electronic design automation (EDA) tools. |
| 1.3 | Circuit artwork, etching process, prototype PCB fabrication. |
| 1.4 | Application and use of electronic test instruments: current and voltage measurements, two wire and four wire techniques, power and signal sources, oscilloscope probes, analogue and digital oscilloscopes. |
| 1.5 | Introduction to Virtual Instrument, application and hands-on practice on Labview or equivalent tool. |
| 2 | TM1102 – Advanced Electronic Practice for Electronics and Information Engineering |
| 2.1 | Introduction to electronic circuit interconnect technologies: SMT, COB and wave-soldering. |
| 2.2 | Introduction to electronic assembly design and manufacturing process, components, tools and machines. |
| 2.3 | Hands-on practice on wave-soldering, SMT process, chip level wire bonding, chip-on-board encapsulation, LCD display attachment with heat seal connector. |
| 2.4 | Introduction to advanced electronic packaging and assembly process: fine-pitch SMT, BGA, Flip-chip and CSP. |
| 2.5 | Soldering quality of BGA assembly and X-ray inspection machine. |
| 3 | TM1612 - Electronic Assembly Prototype Practice |
| 3.1 | Introduction to materials and design of mechanical small parts, chassis and support for electronic products. Hands-on training will focus on the design and fabrication of parts for electronic prototype assembly using available stock material and fastening solution. |
| 3.2 | Application of engineering plastic stock in the design and fabrication of parts, linkages and structures for electronic product prototype. Hands-on training will focus on the application of tools and processes including laser processing, heat forming and vacuum forming with appropriate joining techniques, fastening and assembly solution. |
| 3.3 | Appreciation of mass production processes for metal and plastic parts fabrication. |
| 4 | TM0206 - PCB Process and Surface Finishing |
| 4.1 | Introduction to wet Double-sided PTH Process, materials and design; electroplating on copper and aluminum parts, electroless plating, application and protection; PCB quality control and common defects. |
| 4.2 | Wet process example; photochemical machining application. |
| 4.3 | Safety of common chemicals in PCB & surface finishing fabrication. |
| 5 | TM1110 – Microcomputer Application and Practice |
| 5.1 | Introduction to Microchip Microcomputer families and development tools. |
| 5.2 | Hands-on practice on memory, I/O, data communications, ADC operations. |
| 5.3 | Hands-on practice on LED and LCD displays. |
| 5.4 | Hands-on practice on motor control and sensors. |
| 5.5 | Application of Microcomputer on consumer electronic products, mechatronics, home automation products, wired and wireless connectivity. |
| 6 | TM1111 – Business Software Applications for EIE |
| 6.1 | Application and practice of Microsoft relational database on Web. Data binding and database creation, indexing, input and output operations. |
| 6.2 | Introduction to business computing and logistics; workflow, electronic forms, information acquisition and dissemination on Web. |
| 6.3 | XML-based webform development forms and form server using InfoPath & SharePoint. |
| 6.4 | Hands-on introduction to Microsoft Office Server for business operation, Sharepoint Designer and applications. |
The teaching and learning methodology included instructor guided practice, demonstration and projects. Students will be exposed to industrial grade training facilities and workshop environment for pragmatic work in different engineering disciplines. Different training activities are arranged for individual module. Training activities are designed with a project centred learning or problem based learning approach so as to motivate learning and enable critical thinking.

### Assessment Methods in Alignment with Intended Subject Learning Outcomes

<table>
<thead>
<tr>
<th>Specific Assessment Methods/ Task</th>
<th>% Weighting</th>
<th>Intended Subject Learning Outcomes to be Assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>Continuous Assessment</td>
<td></td>
<td><img src="" alt=" " /> <img src="" alt=" " /> <img src="" alt=" " /> <img src="" alt=" " /> <img src="" alt=" " /></td>
</tr>
<tr>
<td>• Projects</td>
<td>30%</td>
<td><img src="" alt=" " /> <img src="" alt=" " /> <img src="" alt=" " /> <img src="" alt=" " /> <img src="" alt=" " /></td>
</tr>
<tr>
<td>• Tests</td>
<td>30%</td>
<td><img src="" alt=" " /> <img src="" alt=" " /> <img src="" alt=" " /> <img src="" alt=" " /> <img src="" alt=" " /></td>
</tr>
<tr>
<td>• Others (Reports &amp; Logbook)</td>
<td>40%</td>
<td><img src="" alt=" " /> <img src="" alt=" " /> <img src="" alt=" " /> <img src="" alt=" " /> <img src="" alt=" " /> <img src="" alt=" " /></td>
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<tr>
<td>Total</td>
<td>100%</td>
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</tr>
</tbody>
</table>

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

<table>
<thead>
<tr>
<th>Specific Assessment Methods/ Task</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projects</td>
<td>The projects are designed to facilitate students to reflect and apply the knowledge periodically throughout the training.</td>
</tr>
<tr>
<td>Tests</td>
<td>Tests are designed to facilitate students to review the breadth and depth of their understanding on specific topics.</td>
</tr>
<tr>
<td>Others (Reports &amp; Logbook)</td>
<td>Report writing is designed to facilitate students to acquire deep understanding on the topics of the training and to present those concepts clearly.</td>
</tr>
</tbody>
</table>

### Student Study Effort Expected

<table>
<thead>
<tr>
<th>Class contact (time-tabled):</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Lecture/Tutorial</td>
<td>30 Hours</td>
</tr>
<tr>
<td>• Workshop</td>
<td>120 Hours</td>
</tr>
<tr>
<td>Other student study effort:</td>
<td></td>
</tr>
<tr>
<td>• Report/Logbooks</td>
<td>10 Hours</td>
</tr>
<tr>
<td>Total student study effort:</td>
<td>160 Hours</td>
</tr>
</tbody>
</table>

### Reading List and References

Reference Books:

2. IPC-D-279-1996, Design Guidelines for Reliable Surface Mount Technology Printed Board Assemblies, IPC.
3. IPC-J-STD-001E-2010, Requirements for Soldered Electrical and Electronic Assemblies, IPC.
4. IPC-A-610E-2010, Acceptability of Electronic Assemblies, IPC.

Reference Software List:
1. PADS from Mentor Graphics Inc.
2. LabVIEW from National Instrument
3. MPLAB from Microchip Corp.

<table>
<thead>
<tr>
<th>Last Updated</th>
<th>Aug 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepared by</td>
<td>Industrial Centre</td>
</tr>
</tbody>
</table>
Subject Description Form

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>EIE3106</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Title</td>
<td>Integrated Project</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Level</td>
<td>3</td>
</tr>
</tbody>
</table>
| Pre-requisites | Computer Systems Fundamentals (EIE3361)  
|                | Computer Programming (EIE2264)  
|                | Basic Circuit Analysis (EIE2101) |
| Co-requisite/ Exclusion | Nil |

Objectives
This subject is to be taken upon successful progression to mid-stage of the programme. Covering different topics, this subject plays the role of applying knowledge acquired in preceding core subjects in an integrated manner. While the emphasis will mainly be placed on the technical challenges that may encompass circuit design or system integration, software development and troubleshooting, students will also need to address typical non-technical issues involved in conducting a project of product-development.

Intended Subject Learning Outcomes
Upon completion of the subject, students will be able to:

Category A: Professional/academic knowledge and skills
1. Integrate and apply knowledge acquired in previous subjects.
2. Design under cost constraints and with component limitations/tolerances in mind.
3. Locate and resolve practical problems on project development.

Category B: Attributes for all-roundedness
4. Search, self-learn and try untaught solutions.
5. Exercise discipline and time-planning to meet deadlines.
6. Present ideas and findings effectively.
7. Work with others in a team collaboratively.

Contribution of the Subject to the Attainment of the Programme Outcomes
Programme Outcomes:

Category A: Professional/academic knowledge and skills
- Programme Outcome 1: Students can demonstrate their abilities in applying knowledge in science and engineering.
- Programme Outcome 2: Students will be able to design and conduct experiments when implementing the project.
- Programme Outcome 3: Students will learn the design and requirements of the project.
- Programme Outcome 4: Students will learn how to identify, formulate and solve problems when implementing their project.
- Programme Outcome 5: Students will learn how to use modern engineering/IT/software tools in practice.

Category B: Attributes for all-roundedness
- Programme Outcome 6: This subject contributes to the programme outcome by providing the students with an opportunity to practice working in a team.
- Programme Outcome 9: Students are required to self-study technical reference material and recognize the need for life-long learning.
- Programme Outcome 10: This subject provides the chance for students to exercise creativity in designing solutions to problems.
Submissions/ deliverables:

The project(s) is of engineering/software development, with objectively defined milestones (or Subtasks). The scope to be covered shall either include mechanical work, embedded software development and circuit design, or multimedia and network system design. The project(s) shall not be close-ended in nature and shall provide ample headroom for the more enthusiastic students to excel. Students shall work in small groups of two or three. Each Subtask will be given a certain period of time to complete. Each student will have a chance to play the role of Team Leader to lead the group in accomplishing a subtask assigned. Progress will be measured by functional Demonstrations, and written Progress Reports. Upon the completion of the project, each group should give a demonstration/presentation of the completed product or system and submit a Final Report. Students are required to individually keep a Logbook on the work performed during the entire period. The logbooks are to be evaluated and signed by the supervisor /assessor on a periodic basis.

Lectures:

Most of the lectures are to be conducted at the beginning of the semester. During these lectures, the instructor shall give clear explanation on the functional and technical requirements, with a schedule for submitting deliverables. Concepts specific to the project(s), which are not yet learnt by the students, are to be covered in these lectures. Concepts behind critical use of tools and equipment will also be strengthened. Copies of supplementary/reference material shall be distributed, or, links to on-line material shall be provided for self-paced learning.

Guided Laboratory Experiments:

The project will normally require the students to learn to use specific tools and/or equipment. Laboratory demonstrations and exercises will be arranged in the early weeks. Below are some examples:
1. Troubleshooting and measurement techniques using typical equipment.
2. Use of project-specific development tools, software and hardware.
3. Use of specialized equipment for project-specific measurements.

Self-Paced Work:

The class could well be composed of a good mix of students with different timetables. Multiple sessions of laboratory, inevitably some evening slots, will be scheduled to cater for self-paced work in the laboratory, particularly during the second half of the semester.

<table>
<thead>
<tr>
<th>Teaching/Learning Methodology</th>
<th>Teaching and Learning Method</th>
<th>Intended Subject Learning Outcome</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>Lectures 1, 2, 3</td>
<td>Principles and key concepts of the project are explained to students. Uses of tools are demonstrated. The goals are specified. The various problems to be encountered are explained.</td>
<td></td>
</tr>
<tr>
<td>Supervised Laboratory sessions</td>
<td>Supervised Laboratory sessions 1, 2, 3</td>
<td>Students need to learn to use the provided hardware or software modules and expand them to accommodate new functionalities.</td>
<td></td>
</tr>
<tr>
<td>Extended self-paced laboratory</td>
<td>Extended self-paced laboratory 1, 2, 3, 4, 5, 6, 7</td>
<td>Students will work in teams of two or three to construct a product or</td>
<td></td>
</tr>
</tbody>
</table>
Work system. They need to learn to use the provided modules and expand them to accommodate new functionalities.

### Assessment Methods in Alignment with Intended Subject Learning Outcomes

<table>
<thead>
<tr>
<th>Specific Assessment Methods/Tasks</th>
<th>% Weighting</th>
<th>Intended Subject Learning Outcomes to be Assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous Assessment</td>
<td></td>
<td>1  2  3  4  5  6  7</td>
</tr>
<tr>
<td>1. Tests</td>
<td>✓ ✓</td>
<td></td>
</tr>
<tr>
<td>2. Demonstrations</td>
<td>✓ ✓</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>3. Logbook</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>4. Report</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

### Student Study Effort Expected

- **Class contact (time-tabled):**
  - Lecture: 18 Hours
  - Tests: 2 Hours
  - Laboratory: 52 Hours

- **Other student study effort:**
  - Self study / Project work: 24 Hours
  - Report: 4 Hours

**Total student study effort:** 100 Hours

### Reading List and References

**Reference Books:**

*To be specified by the subject lecturer for each project.*

### Last Updated

Aug 2013

### Prepared by

Dr Martin Chow
<table>
<thead>
<tr>
<th><strong>Subject Description Form</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subject Code</strong></td>
</tr>
<tr>
<td><strong>Subject Title</strong></td>
</tr>
<tr>
<td><strong>Credit Value</strong></td>
</tr>
<tr>
<td><strong>Level</strong></td>
</tr>
<tr>
<td><strong>Pre-requisite / Co-requisite/ Exclusion</strong></td>
</tr>
<tr>
<td><strong>Objectives</strong></td>
</tr>
<tr>
<td></td>
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<td></td>
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<tr>
<td><strong>Intended Subject Learning Outcomes</strong></td>
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<tr>
<td><strong>Contribution of the Subject to the Attainment of the Programme Outcomes</strong></td>
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<td></td>
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<tr>
<td><strong>Subject Synopsis/Indicative Syllabus</strong></td>
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</tbody>
</table>
4.1 Data administration: data dictionaries; data quality; database security; authentication and authorisation; concurrent access
4.2 Distributed databases: client-server architecture, replication and partitioning; Internet and Intranet databases

**Laboratory Experiments**

**Experiment/Mini Project:**
Possible mini-projects include
- Design and develop a database system for various practical applications.

**Teaching/Learning Methodology**

Lectures: Fundamental principles and key concepts of the subject are delivered to students.

Tutorials: Students will be able to clarify concepts and to have a deeper understanding of the lecture material; problems and application examples are given and discussed.

Laboratory Sessions: Students will do some programming exercises to enhance their understanding on database design and development.

Mini-project: Students in groups of 2-3 will design and develop database systems for some practical applications.

**Assessment Methods in Alignment with Intended Subject Learning Outcomes**

<table>
<thead>
<tr>
<th>Specific Assessment Methods/Tasks</th>
<th>% Weighting</th>
<th>Intended Subject Learning Outcomes to be Assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Continuous Assessment (Total: 60%)</td>
<td></td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>• Short quizzes</td>
<td>5%</td>
<td>✓ ✓</td>
</tr>
<tr>
<td>• Tests</td>
<td>20%</td>
<td>✓ ✓</td>
</tr>
<tr>
<td>• Laboratory</td>
<td>5%</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>• Mini-project</td>
<td>30%</td>
<td>✓ ✓</td>
</tr>
<tr>
<td>2. Examination</td>
<td>40%</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

**Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:**

Short quizzes: These can measure the students’ understanding of the theories and concepts as well as their comprehension of subject materials.

Tests & Examination: End-of-chapter-type problems are used to evaluate the students’ ability in applying concepts and skills learnt in the classroom; students need to think critically and to learn independently in order to come up with an appropriate design.

Laboratory: Each student is required to produce a report; the accuracy and presentation of the report will be assessed.

Mini-project: Each group of students are required to produce a written report; oral examination will be conducted for each group member to evaluate their technical knowledge and communication skills.

**Student Study Effort**

**Class contact (time-tabled):**
### Expected

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>24</td>
</tr>
<tr>
<td>Tutorial/Laboratory/Practice Classes</td>
<td>18</td>
</tr>
</tbody>
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### Other student study effort:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture: preview/review of notes; homework/assignment; preparation for test/quizzes/examination</td>
<td>36</td>
</tr>
<tr>
<td>Tutorial/Laboratory/Practice Classes: preview of materials, revision and/or reports writing</td>
<td>27</td>
</tr>
</tbody>
</table>

### Total student study effort: 105 Hours

### Reading List and References


### Last Updated

Aug 2013

### Prepared by

Dr M.W. Mak
<table>
<thead>
<tr>
<th>Subject Code</th>
<th>EIE3361</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Title</td>
<td>Computer System Fundamentals</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Level</td>
<td>3</td>
</tr>
<tr>
<td>Pre-requisite</td>
<td>Microcontroller Systems and Interface (EIE3373)</td>
</tr>
<tr>
<td>Co-requisite/ Exclusion</td>
<td>Nil</td>
</tr>
</tbody>
</table>

**Objectives**

This subject provides students with a broad treatment of the fundamentals of computer systems. Upon completion of the subject, the students should be able to appreciate the typical design concepts adopted in Intel 80x86 microprocessors, memory organization and interfacing, to understand interfacing techniques for the I/O system and the basic concepts of operating systems, and to develop simple assembly language programs.

**Intended Subject Learning Outcomes**

Upon completion of the subject, students will be able to:

**Category A: Professional/academic knowledge and skills**

1. Understand the fundamentals of computer systems and associated technologies.
2. Solve hardware and software problems related to using small computer systems.
3. Apply interfacing techniques in using computer systems.

**Category B: Attributes for All-roundedness**


**Contribution of the Subject to the Attainment of the Programme Outcomes**

**Programme Outcomes:**

**Category A: Professional/academic knowledge and skills**

- Programme Outcomes 1 and 4: This subject contributes to the programme outcomes through exploring the concepts and design issues of computer systems and through providing the students with an opportunity to apply their knowledge.
- Programme Outcomes 2, 3, and 5: This subject contributes to the programmes outcomes through teaching assembly language programming and interfacing design of memory and I/O systems.
- Programme Outcomes 2, 4, and 5: This subject contributes to the programme outcomes by providing students with laboratory exercises to analyze file systems, to test interfacing techniques, to write and debug simple assembly language programs.

**Category B: Attributes for all-roundedness**

- Programme Outcome 9: This subject contributes to the programme outcome by providing students with the foundations for life-long learning and continual professional development in the areas of computer system fundamentals.

**Subject Synopsis/Indicative Syllabus**

**Syllabus:**

1. **Introduction to Computing**
   - Data formats
   - Internal organization of computers
   - Inside CPUs
   - Brief history of the CPU

2. **Computer Arithmetic**
Floating-point numbers and operations
Fast addition
Fast multiplication algorithms

3. The 80x86 Microprocessor
   Brief history of the 80x86 family
   Inside the 80x86

4. 80x86 Instructions
   Types of instructions
   Segments in the 80x86
   80x86 addressing modes

5. Processor Control Units
   Execution of a complete instruction
   Single-bus and multiple-bus organization
   Hardwired and microprogrammed control

6. Assembly Programming
   A sample program
   Assemble, link, and run a program

7. Memory and Memory Interfacing
   Memory address decoding
   Data integrity in RAM and ROM
   16-bit memory interfacing

8. Input/Output and I/O Interfacing
   Input/output instructions
   I/O address decoding
   I/O communication techniques

9. Interrupts and DMA
   Basics of interrupts
   8088/86 interrupts
   Direct memory accessing

10. Secondary Storage and File Systems
    Secondary storage
    Disk organization: boot record, FAT, and directory
    File systems

11. PC Bus Architecture
    Evolution of bus architecture from ISA to PCI and USB
    Performance of various buses

12. Introduction to Operating Systems
    OS objectives and functions
    Modern operating systems
    Microsoft windows overview
    UNIX systems
    Linux
    Multitasking and time-sharing
    Scheduling algorithms

**Laboratory Experiments:**

1. 80x86 registers and memory architecture
2. 80x86 programming
3. Assembly language programming
4. BIOS and DOS programming
5. 8255 PPI chip
6. File systems
## Teaching/ Learning Methodology

<table>
<thead>
<tr>
<th>Teaching and Learning Method</th>
<th>Intended Subject Learning Outcome</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures 1, 2, 3</td>
<td></td>
<td>fundamental principles and key concepts of the subject are delivered to students.</td>
</tr>
<tr>
<td>Tutorials 1, 2, 3</td>
<td></td>
<td>supplementary to lectures and are conducted with smaller class size; students will be able to clarify concepts and to have a deeper understanding of the lecture material; problems and application examples are given and discussed.</td>
</tr>
<tr>
<td>Laboratory sessions 1, 2, 3, 4</td>
<td>1, 2, 3</td>
<td>students will make use of an x86 assembler and debugger to develop assembly programs and explore basic file systems and OS concepts; and circuit boards to study various I/O interfacing techniques and evaluate their efficiency and performance.</td>
</tr>
<tr>
<td>Assignments 1, 2, 3, 4</td>
<td>1, 2, 3</td>
<td>Through working assignment and end-of-chapter problems in text books, students will develop a firm understanding and comprehension of the knowledge taught.</td>
</tr>
</tbody>
</table>

### Assessment Methods in Alignment with Intended Subject Learning Outcomes

<table>
<thead>
<tr>
<th>Specific Assessment Methods/ Task</th>
<th>% Weighting</th>
<th>Intended Subject Learning Outcomes to be Assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Coursework</td>
<td>40%</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Laboratory sessions</td>
<td></td>
<td>✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>Assignments</td>
<td></td>
<td>✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>Tests</td>
<td></td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>2. Examination</td>
<td>60%</td>
<td>✓ ✓</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>
Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

<table>
<thead>
<tr>
<th>Specific Assessment Methods/Tasks</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments, tests and examination</td>
<td>end-of-chapter type problems used to evaluate students’ ability in applying concepts and skills learnt in the classroom; students need to think critically and creatively in order to come with an alternate solution for an existing problem.</td>
</tr>
<tr>
<td>Laboratory sessions</td>
<td>each student is required to produce written reports; accuracy and the presentation of the reports will be assessed.</td>
</tr>
</tbody>
</table>

Student Study Effort Expected

<table>
<thead>
<tr>
<th>Class contact (time-tabled):</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>24 Hours</td>
</tr>
<tr>
<td>Tutorial/Laboratory/Practice Classes</td>
<td>18 hours</td>
</tr>
</tbody>
</table>

Other student study effort:

| Lecture: preview/ review of notes; homework/ assignment; preparation for test/ quizzles/ examination | 36 Hours |
| Tutorial/ Laboratory/ Practice Classes: preview of materials, revision and/or reports writing | 27 Hours |

Total student study effort: 105 Hours

Reading List and References

Recommended Textbook:


Reference Books:


Last Updated Aug 2012

Prepared by Dr Z. Chi
### Subject Description Form

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>EIE3362</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Title</td>
<td>Linear Systems</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Level</td>
<td>3</td>
</tr>
<tr>
<td>Pre-requisite</td>
<td>Mathematics I (AMA2111)</td>
</tr>
<tr>
<td>Co-requisite/ Exclusion</td>
<td>Nil</td>
</tr>
</tbody>
</table>

#### Objectives

1. To provide students with basic concepts and techniques for the modelling and analysis of linear continuous-time and discrete-time signals and systems.
2. To provide students with an analytical foundation for further studies in Communication Engineering and Digital Signal Processing.

#### Intended Subject Learning Outcomes

**Upon completion of the subject, students will be able to:**

**Category A: Professional/academic knowledge and skills**
1. Understand the concepts, principles and techniques relating to linear systems.
2. Apply knowledge of mathematics and scientific principles to solve engineering problems relating to linear systems.
3. Understand the fundamentals of linear systems in real applications.

**Category B: Attributes for all-roundedness**
4. Communicate effectively.
5. Think critically.
6. Work in a team and collaborate effectively with others.

#### Contribution of the Subject to the Attainment of the Programme Outcomes

**Programme Outcomes:**

**Category A Professional/academic knowledge and skills**
- Programme Outcome 1: This subject contributes to the programme outcome through teaching of the fundamentals in linear systems and providing the students with an opportunity to practice the application of knowledge.
- Programme Outcome 2: This subject contributes to the programme outcome through providing the students with an opportunity to conduct experiments, analyze, and interpret data.

**Category B Attributes for all-roundedness**
- Programme Outcome 8: This subject contributes to the programme outcome through presentations and exchange of ideas.

#### Subject Synopsis/Indicative Syllabus

**Syllabus:**

1. **Signal Representation**
   - Signal Classification, Continuous and Discrete-Time Signals, Random Signals. Time-Domain and Frequency-Domain Representations.

2. **Continuous-Time and Discrete-Time Systems**

3. **Fourier Representations for Signals**

4. Laplace Transform

5. z-Transform

6. Analogue Filters
Ideal Filters, Bode Plots. Filter Design: Butterworth Filters, Chebyshev Filters, Frequency Transformations.

Laboratory Experiments:
1. Continuous Signals and Systems
2. Discrete Signals and Systems
3. Discrete Fourier Transform

<table>
<thead>
<tr>
<th>Teaching/ Learning Methodology</th>
<th>Teaching and Learning Method</th>
<th>Intended Subject Learning Outcome</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>1, 2, 3</td>
<td>In lectures, students are introduced to the knowledge of the subject. Comprehension is strengthened with interactive Q&amp;A and short quizzes. They will be able to define and describe terms about linear systems. They will also be able to explain and generalize complex structure of knowledge (e.g. convolution of LTI systems)</td>
<td></td>
</tr>
<tr>
<td>Tutorials</td>
<td>1, 2, 3, 4, 5</td>
<td>In tutorials, students apply what they have learnt in analyzing and solving the problems given by the tutor. They will analyze the given information, compare and contrast different solutions or alternative methods.</td>
<td></td>
</tr>
<tr>
<td>Laboratory sessions</td>
<td>1, 2, 3, 4, 5, 6</td>
<td>Students perform hands-on tasks in laboratory exercises to either strengthen what they have learnt or explore new frontiers. They will be able to synthesize a structure of knowledge by designing and planning the tasks, and relate the observation to theories and principles. They will also evaluate outcomes of the tasks they perform and interpret the data they gather (e.g. the use of different transforms of signals).</td>
<td></td>
</tr>
</tbody>
</table>
Assessment Methods in Alignment with Intended Subject Learning Outcomes

<table>
<thead>
<tr>
<th>Specific Assessment Methods/Task</th>
<th>% Weighting</th>
<th>Intended Subject Learning Outcomes to be Assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Coursework</td>
<td>40%</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>• Assignments</td>
<td></td>
<td>✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>• Laboratory sessions</td>
<td></td>
<td>✓ ✓ ✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>• Short quizzes</td>
<td>✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>• Test</td>
<td>✓ ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>2. Examination</td>
<td>60%</td>
<td>✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

<table>
<thead>
<tr>
<th>Specific Assessment Methods/Tasks</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short quizzes</td>
<td>There will be a mid-semester test to evaluate students’ achievement of all the learning outcomes and give feedback to them for prompt improvement. Expectation and grading criteria will be given as in the case of assignment/homework.</td>
</tr>
<tr>
<td>Assignments, tests and examination</td>
<td>There will be an end-of-semester test and examination to assess students’ achievement of all the learning outcomes. These are mainly comprehensive in nature. Expectation and grading criteria will be given as in the case of assignment/homework.</td>
</tr>
<tr>
<td>Laboratory sessions</td>
<td>Each student is required to produce a written report; accuracy and the presentation of the report will be assessed; students’ technical knowledge will be assessed.</td>
</tr>
</tbody>
</table>

Student Study Effort Expected

<table>
<thead>
<tr>
<th>Class contact (time-tabled):</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Lecture</td>
</tr>
<tr>
<td>• Tutorial/Laboratory/Practice Classes</td>
</tr>
</tbody>
</table>

Other student study effort:

| • Lecture: preview(review of notes; homework/assignment; preparation for test/quizzes/examination | 36 Hours |
| • Tutorial/Laboratory/Practice Classes: preview of materials, revision and/or reports writing | 27 Hours |

Total student study effort: 105 Hours
<table>
<thead>
<tr>
<th>Reading List and References</th>
<th>Reference Books:</th>
</tr>
</thead>
</table>

| Last Updated | Aug 2012 |
| Prepared by  | Mr W.C. Lee |
## Subject Description Form

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>EIE3373</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Title</td>
<td>Microcontroller Systems and Interface</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Level</td>
<td>3</td>
</tr>
<tr>
<td>Pre-requisite</td>
<td>Logic Design (EIE2261)</td>
</tr>
<tr>
<td>Co-requisite/Exclusion</td>
<td>Nil</td>
</tr>
</tbody>
</table>

### Objectives
To provide students with the concepts and techniques required in designing computer hardware interfaces and embedded software for microcontrollers.

### Intended Subject Learning Outcomes

#### Upon completion of the subject, students will be able to:

**Category A: Professional/academic knowledge and skills**
1. Use assembly languages in developing programs for the use of microcontrollers.
2. Use the C programming language in developing more complicated programs for the use of microcontrollers.
3. Apply basic skills for interfacing common devices to microcontrollers.

**Category B: Attributes for All-roundedness**
4. Present ideas and findings effectively.
5. Think critically and creatively.

### Contribution of the Subject to the Attainment of the Programme Outcomes

**Programme Outcomes:**

**Category A: Professional/academic knowledge and skills**
- Programme Outcome 1: Understand the fundamentals of microcontroller systems and interface, and have the ability to apply them.
- Programme Outcome 2: Conduct experiments, as well as to evaluate the outcomes.
- Programme Outcome 4: Identify, formulate and solve problems by using the concepts of microcontroller systems and interface.
- Programme Outcome 5: Have the ability to use simulation tools to design and program a microcontroller.

**Category B Attributes for all-roundedness**
- Programme Outcome 9: Recognize the need for life-long learning.

### Subject Synopsis/Indicative Syllabus

**Syllabus:**

1. **Architecture of Typical Microcontrollers**
   - Overview of programming model, instruction set, interface to external memory; use of stack in subroutine calls and interrupt services; access of built-in I/O ports, timers, and counters.

2. **Software Development Environment**
   - Features of a selected macro assembler, working principle of assembler; assembler directives, examples of assembly language programs; features of a selected C compiler, examples of C programs for controlling microcontrollers.

3. **I/O Interfacing**
   - Output-pin driving limitations, current driving, inductive load driving; pulse generation and measurement; keyboard scanning, display multiplexing, LCD controllers, use of peripheral interface IC; analogue signal sensing, analogue and digital conversion; serial interface standards; examples of microcontroller-
based industrial I/O standards.

4. **Embedded Software Development and Testing**
   
   Embedded software issues; tasks and events; interrupt system: nesting, priority and latencies; simulator, debugger and emulator.

**Laboratory Experiments:**

**Practical Works:**

Supervised laboratory sessions:
1. Develop interrupt service routines serving timer interrupts and external interrupts.
2. Embedded software development using MCU development tools.

**Mini-project:**

Build and test a microcontroller system employing external peripheral interface IC, multiple 7-segment displays, LEDs and small keyboard, etc.

<table>
<thead>
<tr>
<th>Teaching/ Learning Methodology</th>
<th>Teaching and Learning Method</th>
<th>Intended Subject Learning Outcome</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lectures</td>
<td>1,2,3</td>
<td>Fundamentals and key concepts of the subject are delivered to students</td>
</tr>
<tr>
<td></td>
<td>Laboratory sessions</td>
<td>1,2,3,4,5</td>
<td>Students will make use of software and hardware tools to carry out laboratory assignments</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment Methods in Alignment with Intended Subject Learning Outcomes</th>
<th>Specific Assessment Methods/Task</th>
<th>% Weighting</th>
<th>Intended Subject Learning Outcomes to be Assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Continuous Assessment</td>
<td>40%</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td></td>
<td>• Laboratory sessions</td>
<td>✓ ✓ ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Tests</td>
<td>✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Examination</td>
<td>60%</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

**Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:**

<table>
<thead>
<tr>
<th>Specific Assessment Methods/Tasks</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments</td>
<td>Enhance the understanding of the taught materials in the lectures</td>
</tr>
</tbody>
</table>
| Tests and examination            | End-of chapter type problems are used frequently to evaluate students’ ability in applying concepts and skills learned in class  
                                    | The students are also needed to think critically and creatively in the process of solving problems |
| Laboratory sessions              | Each student is required to illustrated their achievement and produce a detailed work record when presenting his/her demonstrations |
Students are also needed to think critically and creatively to accomplish certain laboratory assignments.

<table>
<thead>
<tr>
<th>Student Study Effort Expected</th>
<th>Class contact (time-tabled):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lecture</td>
</tr>
<tr>
<td></td>
<td>Tutorial/Laboratory/Practice Classes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other student study effort:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture: preview/ review of notes; homework/assignment; preparation for test/quizzes/examination</td>
</tr>
<tr>
<td>Tutorial/Laboratory/Practice Classes: preview of materials, revision and/or reports writing</td>
</tr>
</tbody>
</table>

**Total student study effort:** 105 Hours

<table>
<thead>
<tr>
<th>Reading List and References</th>
<th>Reference Books:</th>
</tr>
</thead>
</table>

**Last Updated** Aug 2012

**Prepared by** Dr Lawrence Cheung
<table>
<thead>
<tr>
<th>Subject Code</th>
<th>EIE3375</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Title</td>
<td>Object-Oriented Design and Programming</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Level</td>
<td>3</td>
</tr>
<tr>
<td>Pre-requisite</td>
<td>Computer Programming (EIE2264)</td>
</tr>
<tr>
<td>Co-requisite/Exclusion</td>
<td>Nil</td>
</tr>
<tr>
<td>Objectives</td>
<td>This subject will provide students with the principles of object orientation from the perspective of Java implementation and UML. Students are expected to learn the concepts of and practical approaches to object-oriented analysis, design and programming using UML and Java.</td>
</tr>
<tr>
<td>Intended Subject Learning Outcomes</td>
<td>Upon completion of the subject, students will be able to:</td>
</tr>
<tr>
<td></td>
<td>Category A: Professional/academic knowledge and skills</td>
</tr>
<tr>
<td></td>
<td>1. Understand the principles of object oriented design.</td>
</tr>
<tr>
<td></td>
<td>2. Understand and apply the programming language Java in object oriented software development.</td>
</tr>
<tr>
<td></td>
<td>3. Understand and apply the tool UML in object oriented software modelling.</td>
</tr>
<tr>
<td></td>
<td>4. Develop a simple software application using the object oriented approach.</td>
</tr>
<tr>
<td></td>
<td>Category B: Attributes for all-roundedness</td>
</tr>
<tr>
<td></td>
<td>5. Learn independently and be able to search for the information required in solving problems.</td>
</tr>
<tr>
<td>Contribution of the Subject to the Attainment of the Programme Outcomes</td>
<td>Programme Outcomes:</td>
</tr>
<tr>
<td></td>
<td>Category A Professional/academic knowledge and skills</td>
</tr>
<tr>
<td></td>
<td>• Programme Outcome 1: Understand the fundamentals of object oriented design, and have the ability to apply them.</td>
</tr>
<tr>
<td></td>
<td>• Programme Outcome 4: Identify, formulate and solve problems by using object oriented programming.</td>
</tr>
<tr>
<td></td>
<td>• Programme Outcome 5: Have the ability to use tools in object oriented programming.</td>
</tr>
<tr>
<td></td>
<td>Category B Attributes for all-roundedness</td>
</tr>
<tr>
<td></td>
<td>• Programme Outcome 6: Be able to work with others collaboratively in a team.</td>
</tr>
<tr>
<td></td>
<td>• Programme Outcome 9: Recognize the need for life-long learning.</td>
</tr>
<tr>
<td>Subject Synopsis/Indicative Syllabus</td>
<td>Syllabus:</td>
</tr>
<tr>
<td></td>
<td>1. Introduction to Software Engineering</td>
</tr>
<tr>
<td></td>
<td>Software products; the software process; process models; process visibility.</td>
</tr>
<tr>
<td></td>
<td>2. Java Programming Basic</td>
</tr>
<tr>
<td></td>
<td>Java technologies; Java platform; Java language basic: variables, operators, expressions, statements, blocks, control flow, methods, arrays</td>
</tr>
<tr>
<td></td>
<td>3. Object-Oriented Programming with Java</td>
</tr>
</tbody>
</table>
|                  | Objects and classes; class definition; fields, constructors and methods; object interaction; grouping objects; array and collections; designing classes; inheritance and polymorphism; managing inheritance: creating
subclasses and super-classes, hiding member variables, overriding methods. Interfaces and packages.

4. **Web Programming with Java**
   - Java Applets: creating custom applet subclasses, HTML applet tag syntax, passing information from Web pages to applets.
   - Java Servlets: architecture of servlets, client interaction, life cycle of servlets, saving client states; servlet communications, session tracking, and using server resources.

5. **Unified Modelling Language (UML)**
   - Purposes of modelling. Structural Modelling: classes, relationships, class diagrams, interfaces, packages, and object diagrams.
   - Behavioural modelling interactions, use cases, use case diagrams, interaction diagrams, activity diagrams, events, signals, processes and threads.
   - Architectural modelling: components, deployment, collaborations, patterns, frameworks, component diagrams, and deployment diagrams.
   - Mapping UML diagrams to Java Code.

**Laboratory Experiments:**

1. **Laboratory Work**
   - Students will implement an on-line shopping system using Java Servlets and Tomcat Web server. Students will use a UML software tool to write requirement specifications and design documents for the on-line shopping system.

2. **Practical Work**
   - Students will be requested to write and debug Java programs during tutorial and lab sessions.

<table>
<thead>
<tr>
<th>Teaching/ Learning Methodology</th>
<th>Teaching and Learning Method</th>
<th>Intended Subject Learning Outcome</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lectures</td>
<td>1, 2, 3, 4</td>
<td>Fundamental principles and key concepts of the subject are delivered to the students.</td>
</tr>
<tr>
<td></td>
<td>Tutorials</td>
<td>1, 2, 3, 4, 5</td>
<td>Students will be able to clarify concepts and to have a deeper understanding of the lecture material. Problems are given to be solved.</td>
</tr>
</tbody>
</table>
Assessment Methods in Alignment with Intended Subject Learning Outcomes

<table>
<thead>
<tr>
<th>Specific Assessment Methods/ Task</th>
<th>% Weighting</th>
<th>Intended Subject Learning Outcomes to be Assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Continuous Assessment (total 40%)</td>
<td></td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>• Laboratory exercises</td>
<td>8%</td>
<td>✓ ✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>• Tutorial exercises</td>
<td>12%</td>
<td>✓ ✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>• Tests</td>
<td>20%</td>
<td>✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>2. Examination</td>
<td>60%</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

<table>
<thead>
<tr>
<th>Specific Assessment Methods/Tasks</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tutorial Exercises</td>
<td>Students will be able to clarify concepts and to have a deeper understanding of the lecture material. Problems are given to be solved.</td>
</tr>
<tr>
<td>Laboratory Exercises</td>
<td>Students will be able to clarify concepts and to have a deeper understanding of the lecture material. Problems are given to be solved.</td>
</tr>
<tr>
<td>Tests and Examination</td>
<td>Students will be able to clarify concepts and to have a deeper understanding of the lecture material. Problems are given to be solved.</td>
</tr>
</tbody>
</table>

Student Study Effort Expected

<table>
<thead>
<tr>
<th>Class contact (time-tabled):</th>
<th>Other student study effort:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture 24 Hours</td>
<td>Lecture: preview/review of notes; homework/assignment; preparation for test/quizzes/examination 36 Hours</td>
</tr>
<tr>
<td>Tutorial/Laboratory/Practice Classes 18 hours</td>
<td>Tutorial/Laboratory/Practice Classes: preview of materials, revision and/or reports writing 27 Hours</td>
</tr>
</tbody>
</table>

Total student study effort: 105 Hours

Reading List and References

Textbooks:

Reference Books:
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>

| Last Updated | Aug 2012 |
| Prepared by  | Dr M.W. Mak |
Subject Description Form

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>EIE3381</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Title</td>
<td>Communication Fundamentals</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Level</td>
<td>3</td>
</tr>
<tr>
<td>Pre-requisite/Exclusion</td>
<td>Nil</td>
</tr>
<tr>
<td>Co-requisite</td>
<td>Mathematics I (AMA2111)</td>
</tr>
<tr>
<td>Objectives</td>
<td>Telecommunication systems enable the transfer and exchange of information over communication channels that are corrupted by disturbances and noises in a cost-effective manner. The major objectives of this subject are for the students to establish a firm foundation for the understanding of telecommunication systems, and the relationship among various technical and socio-economic factors when such systems are designed and operated.</td>
</tr>
<tr>
<td>Intended Subject Learning Outcomes</td>
<td>Upon completion of the subject, students will be able to:</td>
</tr>
<tr>
<td>Category A: Professional/academic knowledge and skills</td>
<td>1. Understand the fundamentals of signal analysis and communication systems. 2. Apply the fundamentals to solve problems related to communications. 3. Design simple telecommunication systems that consist of basic and essential building blocks.</td>
</tr>
<tr>
<td>Category B: Attributes for all-roundedness</td>
<td>4. Present ideas and findings effectively. 5. Think critically. 6. Learn independently.</td>
</tr>
<tr>
<td>Contribution of the Subject to the Attainment of the Programme Outcomes</td>
<td>Programme Outcomes:</td>
</tr>
</tbody>
</table>
| Category A: Professional/academic knowledge and skills | • Programme Outcomes 1, 3, and 4: In this subject, the students will learn how to apply mathematics, science and engineering knowledge in analyzing the features of, and solving problems for communication systems. They will also learn how the relationship between various conflicting factors (power, bandwidth, signal-to-noise ratio, costs) that when solving problems for communication systems.  
• Programme Outcomes 2: In this subject, the students will learn how to setup and conduct experiments for the study of communication systems.  
• Programme Outcome 5: In this subject, the students will learn how to make use of appropriate IT tools to analyze, visualize, and present features about communication systems. |
| Category B: Attributes for all-roundedness | • Programme Outcome 8: The students will learn how to communicate effectively in writing by doing homework and assignments, writing laboratory reports, and writing laboratory log books.  
• Programme Outcome 10: In this subject, the students will be aware of the need of creativity in the process of design basic telecommunication systems. |
| Subject Synopsis/Indicative Syllabus | Syllabus: |
|                       | 1. Introduction to communication systems. Elements of a basic |
communication system. Examples of wired and wireless systems.

2. **Fundamental Concepts of Signal and Systems**
   Classification of signal and systems, Fourier series, Fourier transform, time-frequency relationships, Parseval's theorem, power spectral density, autocorrelation correlation and cross-correlation function, convolution, sampling theorem, filters in communication systems, energy spectral density.

3. **Information Theory**
   3.1 Measure of information. Entropy.
   3.2 Channel capacity.

4. **Analogue Communications**
   4.1 Amplitude modulation: double sideband, single sideband and vestigial side band modulation, frequency spectrum and power relationship of the amplitude modulation signal, demodulation methods.
   4.2 Angular modulation: phase and frequency modulation, frequency spectrum of the angular modulation signals, demodulation methods.
   4.3 Output signal-to-noise ratio in various analogue modulations systems. S/N ratio improvement through pre-emphasis/de-emphasis.

5. **Digital Communications**
   5.1 Pulse amplitude modulation, quantizing and coding, quantization noise, uniform & non-uniform quantization, pulse code modulation, delta modulation. Comparison of pulse code modulation & delta modulation systems.
   5.2 Time division multiplexing: concept of framing and synchronizations, TDM-PCM telephone system, comparison of TDM & FDM.

**Laboratory Experiments:**

- Fourier Analysis of a Square Wave
- Amplitude Modulation (Basic knowledge)
- Frequency Modulation (Basic knowledge)
- Sampling and Time Division Multiplexing

<table>
<thead>
<tr>
<th>Teaching/ Learning Method</th>
<th>Intended Subject Learning Outcome</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures, supplemented with short quizzes.</td>
<td>A(1,2,3)</td>
<td>In lectures, students are introduced to the <em>knowledge</em> of the subject, <em>comprehension</em> is strengthened with short quizzes. They will be able to <em>define</em> and <em>describe</em> terms about signal analysis and communication systems.</td>
</tr>
<tr>
<td>Tutorials where case studies are conducted, and problems are given to students for them to solve.</td>
<td>A(1,2,3) B(3, 5)</td>
<td>In tutorials, students <em>apply</em> what they have learnt in analyzing the cases and solving the problems given by the tutor. They will <em>analyze</em> the given information, <em>compare</em> and <em>contrast</em> different scenarios and propose solutions or alternatives.</td>
</tr>
<tr>
<td>Four laboratory exercises, where students will perform hands-on tasks in different topics. After the laboratory, they</td>
<td>A(1) B(4,5,6)</td>
<td>Students perform hands-on tasks in laboratory exercises to either strengthen what they have learnt or explore new frontiers. They will be able to <em>synthesize</em> a structure of knowledge by designing and planning.</td>
</tr>
</tbody>
</table>
will have to write a report to reflect on what they have learnt and the experience and knowledge they have derived. They will have to analyze the observation to theories and principles. They will also evaluate outcomes of the tasks they perform and interpret the data they gather (e.g. the transmission bandwidth of a wideband FM communication system).

Assignment and Homework, solving end-of-chapter problems A(1,2) B(4,5,6)

Through working assignment and homework, and end-of-chapter problems in text books, students will develop a firm understanding and comprehension of the knowledge taught. They will analyze given information and apply knowledge in solving problem.

### Assessment Methods in Alignment with Intended Subject Learning Outcomes

<table>
<thead>
<tr>
<th>Specific Assessment Methods/ Task</th>
<th>% Weighting</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1. Continuous Assessment</td>
<td>40%</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>• Assignments/ Homework</td>
<td>✔ ✔ ✔ ✔ ✔ ✔</td>
<td></td>
</tr>
<tr>
<td>• Laboratory works and reports</td>
<td>✔ ✔ ✔ ✔ ✔ ✔</td>
<td></td>
</tr>
<tr>
<td>• Mid-semester test</td>
<td>✔ ✔ ✔ ✔ ✔ ✔</td>
<td></td>
</tr>
<tr>
<td>• End-of-semester test</td>
<td>✔ ✔ ✔ ✔ ✔ ✔</td>
<td></td>
</tr>
<tr>
<td>2. Examination</td>
<td>60%</td>
<td>✔ ✔ ✔ ✔ ✔ ✔</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

### Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

**Assignment/Homework**

Assignment/Homework and case study reports are given to students to assess their competence level of knowledge and comprehension, ability to analyze given information, ability to apply knowledge and skills in new situation, ability to synthesize structure, and ability to evaluate given data to make judgment. The criteria (i.e. what to be demonstrated) and level (i.e. the extent) of achievement will be graded according to six levels: (A+ and A), Good (B+ and B), Satisfactory (C+ and C), Marginal (D) and Failure (F). These will be made known to the students before an assignment/homework is given. Feedback about their performance will be given promptly to students to help them improve their learning.

**Laboratory works and reports**

Students will be required to perform four laboratory works and write four group laboratory logbook and one individual laboratory report. The emphasis is on
assessing their ability to apply, synthesize and evaluate. Expectation and grading criteria will be given as in the case of assignment/homework.

<table>
<thead>
<tr>
<th>Mid-semester test</th>
<th>There will be a mid-semester test to evaluate students’ achievement of all the learning outcomes and give feedback to them for prompt improvement. Expectation and grading criteria will be given as in the case of assignment/homework.</th>
</tr>
</thead>
<tbody>
<tr>
<td>End-of-semester test and Examination</td>
<td>There will be an end-of-semester test and examination to assess students’ achievement of all the learning outcomes. Expectation and grading criteria will be given as in the case of assignment/homework.</td>
</tr>
</tbody>
</table>

### Student Study Effort Expected

<table>
<thead>
<tr>
<th>Class contact (time-tabled):</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Lecture</td>
<td>24 Hours</td>
</tr>
<tr>
<td>• Tutorial/Laboratory/Practice Classes</td>
<td>18 hours</td>
</tr>
</tbody>
</table>

### Other student study effort:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Lecture: preview/review of notes; homework/assignment; preparation for test/quizzes/examination</td>
<td>36 Hours</td>
</tr>
<tr>
<td>• Tutorial/Laboratory/Practice Classes: preview of materials, revision and/or reports writing</td>
<td>27 Hours</td>
</tr>
</tbody>
</table>

**Total student study effort:** 105 Hours

### Reading List and References

**Textbook:**


**Reference Books:**


**Last Updated**

Aug 2012

**Prepared by**

Dr W.Y. Tam
# Subject Description Form

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>EIE3399</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Title</td>
<td>Data Communications</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Level</td>
<td>3</td>
</tr>
<tr>
<td>Pre-requisite/ Co-requisite/ Exclusion</td>
<td>Nil</td>
</tr>
</tbody>
</table>

## Objectives

This subject aims at providing students with a firm foundation about data communications and TCP/IP-based computer networking.

## Intended Subject Learning Outcomes

Upon completion of the subject, students will be able to:

**Category A: Professional/academic knowledge and skills**

1. Identify various components in a data communication system, describe their properties, explain how they work and evaluate their performance.
2. Describe how the physical, data link, and network layers operate in a typical data communication system.
3. Evaluate the performance of some common data and computer networks.
4. Design solutions to solve engineering problems that require the applications of data and computer communication technology.

**Category B: Attributes for all-roundedness**

5. Think critically and learn independently.

## Contribution of the Subject to the Attainment of the Programme Outcomes

**Programme Outcomes:**

**Category A: Professional/academic knowledge and skills**

- Programme Outcome 1: This subject contributes to the programme outcome through the teaching of the knowledge of data communications and through providing the students with an opportunity to apply their knowledge.
- Programme Outcomes 4, 5: This subject contributes to the programme outcome by providing the opportunity for students to solve practical engineering problems pertaining to the fields of data communications and computer networking.

**Category B: Attributes for all-roundedness**

- Programme Outcome 9: This subject contributes to the programme outcome by providing students with the foundations for life-long learning and continual professional development in the areas of data communications and computer networks.

## Subject Synopsis/Indicative Syllabus

**Syllabus:**

1. **Data Communication Systems and Components**
   - Distributed processing, protocols and services, interfacing standard, layering architecture.

2. **Basic Concepts**
   - Line configuration, topology, transmission mode, networks categories.

3. **Network Architecture Layering**
   - OSI 7-layer model, TCP/IP 4-layer model, typical components in layers.

4. **Physical Layer Standards**
   - Transmission media, baseband data transmission and encoding methods, passband data transmission and modulation methods, modem design, interfacing standards, multiplexing.
5. **Data Link Layer**
   Error control – error detection code and line protocol, flow control, data link layer protocol examples – stop-and-wait protocol, sliding window protocol.

6. **Local Area Network**
   Ethernet and its variations, LAN internetworking – LAN switches and virtual LAN, wireless LAN, structured cabling system

7. **Network Layer**
   Internetworking and the Internet, TCP/IP protocol suite – protocol operations and performance

**Laboratory Experiments:**


---

### Teaching/ Learning Methodology

<table>
<thead>
<tr>
<th>Teaching and Learning Method</th>
<th>Intended Subject Learning Outcome</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>1, 2, 3, 4</td>
<td>fundamental principles and key concepts of the subject are delivered to students</td>
</tr>
<tr>
<td>Tutorials</td>
<td>1, 2, 3, 5</td>
<td>supplementary to lectures and are conducted with smaller class size; students will be able to clarify concepts and to have a deeper understanding of the lecture material; problems and application examples are given and discussed</td>
</tr>
<tr>
<td>Laboratory sessions/Mini-project</td>
<td>4, 5</td>
<td>students will have practical work on different data communication systems and applications.</td>
</tr>
</tbody>
</table>

---

### Assessment Methods in Alignment with Intended Subject Learning Outcomes

<table>
<thead>
<tr>
<th>Specific Assessment Methods/Tasks</th>
<th>% Weighting</th>
<th>Intended Subject Learning Outcomes to be Assessed (Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1. Continuous Assessment (total 50%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Assignments</td>
<td>6%</td>
<td>✓</td>
</tr>
<tr>
<td>• Tests</td>
<td>24%</td>
<td>✓</td>
</tr>
<tr>
<td>• Laboratory/Mini-Project</td>
<td>20%</td>
<td>✓</td>
</tr>
<tr>
<td>2. Examination</td>
<td>50%</td>
<td>✓</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

The continuous assessment will consist of a number of assignments, two to three tests, and practical work.


### Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

<table>
<thead>
<tr>
<th>Specific Assessment Methods/Tasks</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments, tests and examination</td>
<td>end-of chapter type problems used to evaluate students’ ability in applying concepts and skills learnt in the classroom; students need to think critically and creatively in order to come with an alternate solution for an existing problem.</td>
</tr>
<tr>
<td>Laboratory/Mini-Project</td>
<td>each group of students are required to develop a modem board; students need to demonstrate the functions of the modem board and describe the implementation details in front of the instructors, and also produce a written report; performance of the demonstration, accuracy and the presentation of the report will be assessed.</td>
</tr>
</tbody>
</table>

### Student Study Effort Required

<table>
<thead>
<tr>
<th>Class contact (time-tabled):</th>
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**Other student study effort:**

| Lecture: preview/review of notes; homework/assignment; preparation for test/quizzes/examination | 36 Hours |
| Tutorial/Laboratory/Practice Classes: preview of materials, revision and/or reports writing | 27 Hours |

**Total student study effort:** 105 Hours

### Reading List and References

**Reference Books:**


### Last Updated

Aug 2012

### Prepared by

Mr W.C. Lee
### Different types of GPA, and their calculation methods

<table>
<thead>
<tr>
<th>Types of GPA</th>
<th>Purpose</th>
<th>Rules for GPA calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA</td>
<td>Determine Progression/Graduation</td>
<td>(1) All academic subjects taken by the student throughout his study, both inside and outside the programme curriculum, are included in the GPA calculation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2) For training subjects, including WIE and Clinical/Field subjects, departments can decide whether to include them in the GPA calculation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3) For retake subjects, only the last attempt will be taken in the GPA calculation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(4) Level weighting, if any, will be ignored.</td>
</tr>
<tr>
<td>Semester GPA</td>
<td>Determine Progression</td>
<td>Similar to the rules for GPA as described above, except that only subjects taken in that Semester, including retaken subjects, will be included in the calculation.</td>
</tr>
<tr>
<td>Weighted GPA</td>
<td>To give an interim indication on the likely Award GPA</td>
<td>(1) Similar to the rules for GPA, except that only subjects inside the programme curriculum concerned will be included in the calculation. Subjects outside the programme curriculum will be excluded.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2) Departments can decide whether the training subjects are to be counted towards the Weighted GPA.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3) For retake subjects, only the last attempt will be taken in the Weighted GPA calculation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(4) A weighting of 2 for Level 1 and 2 subjects, and a weighting of 3 for Level 3 and 4 subjects, will be included in the calculation to determine the Honours classifications.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(5) The weighted GPA will be the same as the Award GPA unless a student has taken more subjects than required.</td>
</tr>
<tr>
<td>Types of GPA</td>
<td>Purpose</td>
<td>Rules for GPA calculation</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Major/Minor GPA   | For reference and determination of award classification | *Major/Minor GPA*<br><br>(1) Only subjects inside the curriculum of the Major/Minor Programmes will be taken in the Major/Minor GPA calculation.  
(2) Departments can decide whether the training subjects, are to be counted towards the Major/Minor GPA.  
(3) For retake subjects, only the last attempt will be taken in the Major/Minor GPA calculation.  
(4) Up to 6 credits from the Major/GUR [including Language Communication Requirements (LCR) subjects at proficiency level] can be counted towards the chosen Minor. (Ref. Section 34.3) |
| Award GPA         | For determination of award classification          | If the student has not taken more subjects than required, the Award GPA will be as follows:  
(1) For single Major:  
Award GPA = Weighted GPA  
(2) For Major/Minor programmes:  
Award GPA = Major GPA |