



**ENGINEERING INDUSTRIAL  
PLACEMENT HANDBOOK  
EE025-6-3-EIP**

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## 1.0 Introduction

### **Industrial Placement Rationale (Excerpt from Board of Engineers Malaysia)**

Exposure to professional engineering practice is a key element in differentiating an engineering degree from an applied science degree. Although the status of Corporate or Professional Engineer requires a substantial period of experiential formation in industry after the completion of an accredited academic programme, it is clearly inadequate, over the first few critical years, for the student's perceptions of engineering to develop in complete isolation from the realities of practice.

Familiarity with all common engineering processes is essential and exposure at a practical level to a wide variety of processes is required at a level appropriate to young professional. Whilst it is clearly desirable for students to get a feel for the skills involved, the central aim is to achieve appreciation, not to acquire craft skills. Clearly, many of the latest processes and large scale or costly operations can only be the subject of observation or demonstration, and visits to engineering works may be helpful in many such cases. Industrial training is a key component of learning in an integrated academic curriculum.

### 1.1 Course Learning Outcomes (CLO) and Programme Learning Outcomes (PLO)

On successful completion of the Industrial Placement, students should be able to:

<b>CLO1</b>	Synthesize the knowledge obtained in the classroom in a real world environment. (C6, PLO3)
<b>CLO2</b>	Explain engineering practice for safety, health, social, cultural and legal responsibilities in an organisation. (C5, PLO6)
<b>CLO3</b>	Explain professionalism in an organisation. (C5, PLO8)
<b>CLO4</b>	Explain effectively and reflect on the technical aspect of the industrial experiences. (A3, PL10)
<b>CLO5</b>	Review experiences in a working environment in relation to your area of study. (C5, PLO12)
<b>CLO6</b>	Explain project management execution, economic decision making and entrepreneurial considerations for the task undertaken. (C5, PLO11)
<b>CLO7</b>	Review the sustainability and environmental measures for the task undertaken. (C5, PLO7)

List of Programme Learning Outcomes (PLO) covered:

<b>PLO3</b>	Ability to design innovative solutions for complex engineering problems.
<b>PLO6</b>	Ability to engage in professional engineering practice for safety, health, social, cultural and legal responsibilities in developing solutions for complex engineering problems.

<b>PLO7</b>	Ability to comprehend and demonstrate good practices of engineering in sustainable development and environmental considerations for the solutions of complex engineering problems.
<b>PLO8</b>	Ability to execute the responsibilities of an Engineer professionally and ethically.
<b>PLO10</b>	Ability to communicate effectively and professionally on complex engineering activities.
<b>PLO11</b>	Ability to demonstrate entrepreneurship skills, engineering project management and economics decision making in multidisciplinary environments.
<b>PLO12</b>	Ability to recognize the need for and be able to engage in independent and life long learning towards continuous professional development.

## 1.2 Industrial Placement Period

As per the requirement of the Board of Engineers Malaysia, approximately 2 weeks of internship programme is equivalent to 1 credit and the minimum period of internship is for a period of 10 weeks minimum (According to EAC manual). However, at APU, students were given a duration of 16 weeks to cover **the minimum 6 credits (12 weeks)** defined to this programme.

As per the requirement of the Board of Engineers Malaysia, the internship will be offered **during the year-end break after their 6<sup>th</sup> Semester (Year 3)**. This means they could enrol on to Semester 7 of Year 4 upon returning from the internship if they have fulfilled all requirements of the Examination Board. The start date of the internship will be indicated in the Course Schedule when they progress into the Year 3.

## 1.3 Aims and Objectives of Industrial Placement

### a) Interpersonal and Social Skills

This factor is concerned with gaining an appreciation of human relationship. It relates to such various abilities as working effectively as part of a team and as a member of a hierarchy; mixing with others including superiors, peers and subordinates; organising the work of others and exercising responsibility over them. Communication skills are also an important part of this factor, and include the ability to act tactfully, to present a case clearly, and to interpret the needs of others, whether articulated or implied.

### b) Insight into the World of Work

This factor is concerned with the insight into the 'world of work' to be gained from a placement experience. It is about understanding the constraints of working life, as well as being aware of the functional relationships within and between organisations. An orientation toward work processes, the relationship of work to the rest of society, and an understanding of the realities of working life are all important elements of this factor.

### c) Interrelationships of Theory and Practice

This factor is about relating theory to practice, and it describes how a placement offers practical experience of the application of theoretical concepts. It is concerned with appraising the usefulness of theory and academic knowledge at the practical level, as well as offering a context within which to integrate the practical and theoretical parts of an academic course. Typically, the placement offers an experience in complex engineering activities and problem-solving, of which students are required to apply fundamental

principles to approach systems, components or processes design with no obvious or single solution. During placement, students will be able to practice the complex problem-solving with appropriate consideration for public safety and health, cultural, societal and environment considerations.

**d) Personal Development**

This factor is about developing personal attributes like self-confidence, maturity and self-reliance. The ability to accept responsibility, to work effectively - especially under stress, and to build on previous knowledge and experience, all contribute to this factor.

**e) Additional and Indirect Benefits of Placements**

Various benefits arise from work experience in addition to those directly related to a training programme. Such benefits include opportunities for employment and recruitment course appraisal and review, and informed selection of course options and project work. It gives university staff links to industry and commerce, and in return employers gain closer links to the educational sector. A placement can provide fresh ideas and new experiences to all those who participate in it, such as meeting employers' short-term project needs.

**f) Career Preparation**

This factor is about the contribution of work experience makes to career development. Knowledge of potential careers and experience as well as the development of new areas of interest are important aspects of a placement. An insight into different careers and the opportunities for recruitment provided are other significant aspects of this factor.

**g) Technical Development**

This factor is concerned with the development of technical knowledge and expertise. It is about being involved in product innovation, design and construction. It concerns perceiving the needs of a task accurately and knowing how to extract information quickly and effectively.

## 1.4 Type of Work During Placement

The structure of the placement is dependent on what work the employer requires. Our only proviso is that the work must be related to the student's course of study. Typically, the student may become part of a project team or work solo on a variety of projects. We would encourage organisations to contact the placements unit when they have a role which may be suitable for one of our students, as we have many awards which combine a variety of skills. Some of the most successful placements from the perspective of the employer and student have been challenging projects that "stretch" the student and necessitate the use of complex engineering problem-solving skills. However, it should be said that students do need some guidance and structured help during the placement from the employer and University, particularly in the first few months of the placement.

## 1.5 Support for Students

The placements team are on hand to support the student along with the assigned Visit Tutor/University/Academic supervisor. The student is encouraged to overcome any difficulties they may encounter themselves, but the team are a support mechanism that is always available.

## 1.6 Support for Companies

As with the students, the placements team wish to build a good relationship with the companies and will endeavour to support the facilitation of a successful placement. A placement work plan or project is discussed with the appointed Visit Tutor/University/Academic supervisor from the University and the student's Industrial Mentor/Company Supervisor at work. Assessment is made both by the firm using a feedback form and via discussions during a Visit Tutor/University/Academic supervisor visit(s) to the firm. The tutor checks that the student is performing and that there are no adverse personal issues.

## 1.7 Future Recruitment

Many employers view the placements as a potential induction period leading to a full-time role after graduation. Some of our students who have recently returned for the final year of the course are continuing their involvement with their placement firms and are set to return as full-time members of staff after graduation.

## 1.8 Remuneration

The placement is normally a paid period of employment. The rate varies according to type, size, and policy of industries. The rate is influenced by factors such as the worth of the work undertaken and location.

## 1.9 Employment Contract

The placement conditions of employment will be derived from a contract drawn up between the firm and the student. A normal employment contract for short-term/temporary staff is adequate.

## 1.10 Placement Referral

A student should normally have achieved a mark of at least 50% overall in the assessment of Internship/ Industrial Experience module. If you fail to pass the module, placement referral will be required. The form of referral of a failed industrial placement will be decided by the Award Board and will depend on the nature of the failure. It may, for example, take the form of a resubmitted report. In exceptional circumstances a student who has failed internship may be allowed to repeat the year once only. In such cases it will be the student's own responsibility to find an appropriate placement in which to repeat the year.

**For any further information please contact the placements unit:**

**Email: [internship@apu.edu.my](mailto:internship@apu.edu.my)**

**Internship Coordinator for School of Engineering**

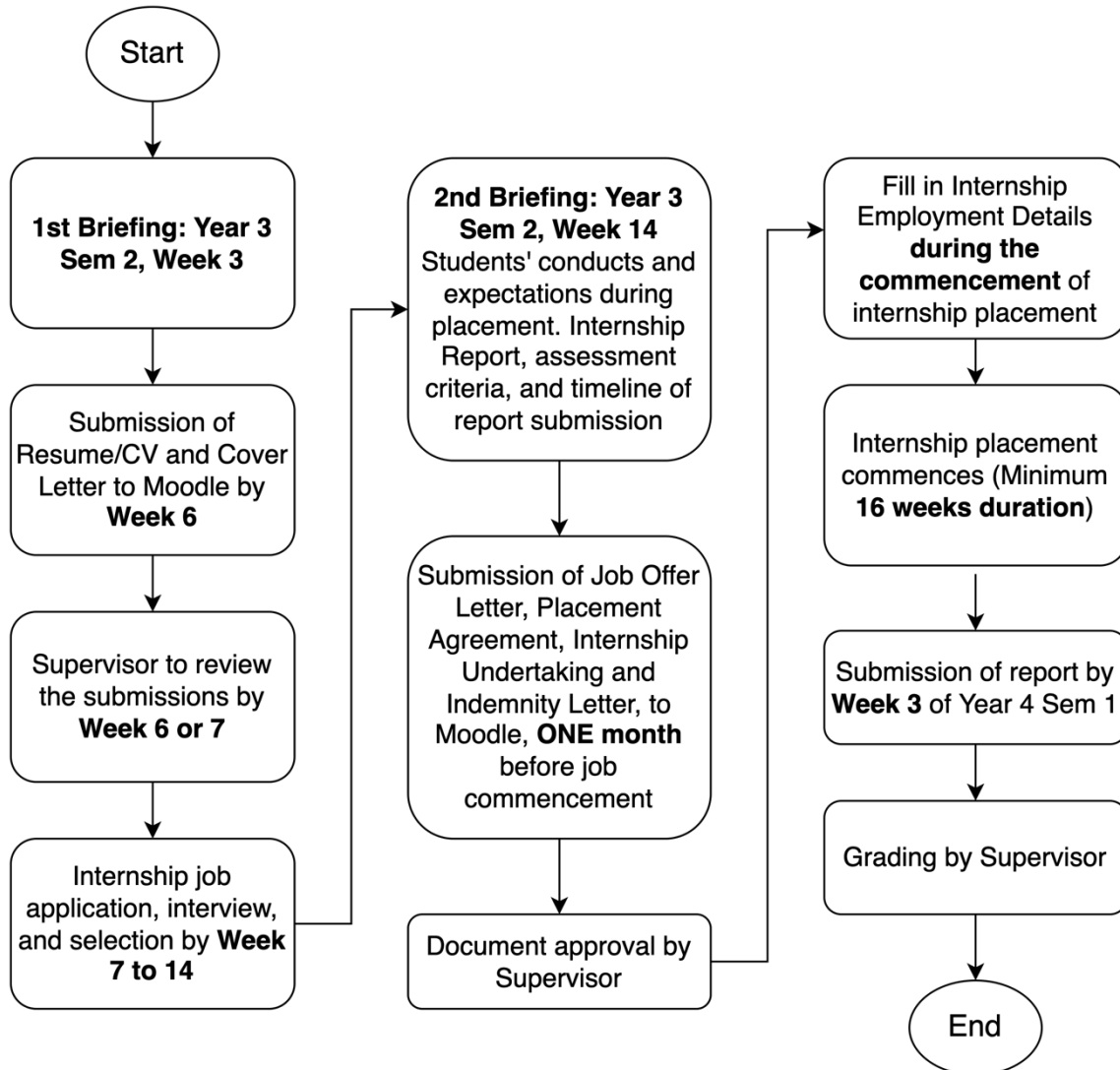
**Ir Eur Ing Ts Dr Lau Chee Yong**

**Email: [laucheejong@apu.edu.my](mailto:laucheejong@apu.edu.my)**

**Phone: 03-8992 5083**

## 2.0 Industrial Placement Mechanism and Process Flow

A flow chart of internship process is shown in Figure 1 and the descriptions of the internship process are summarised as follows:



**Figure 1: Industry Placement Process Flowchart**

### 2.1 Briefing and Pre-Registration

The first briefing about the internship will be conducted by the Internship Coordinator in **Week 3 of Semester 2, Year 3**. They will be generally briefed on what to expect during their internship. This is to mentally prepare students that they will have to do internship as well as plan their leaves accordingly. Upon completion of the briefing, students will be required to look for a placement. Internship Support Letter will be issued by admin after the briefing session. An Industrial Placement Handbook can be accessed by each student via Knowledge Base and students are advised to read and clearly understand the flow of the entire internship process. The template of CV and the sample of cover letter can be found in Knowledge Base.

The second briefing will be held by the Internship Coordinator in **Week 14 of Semester 2, Year 3**. The briefing is regarding the report format and the submission procedures. This session is more focussing on the Assessment and Grading Criteria. Students are also required to complete all pre-internship requirements if the job status is confirmed. The mentioned documents are required to be submitted to moodle.

## 2.2 Application, Interview and Selection

Subsequent to these pre-registration students are now ready to source and submit their internship applications to their prospective employers of their choice. Students are responsible for their own application as university is playing role in providing guidance and advice on job application.

It is an important provision on internship and requirement that will allow students to experience all the stages of searching and applying for jobs. Students must produce all the necessary evidence that they have tried and attempted to apply for jobs to three different employers and yet they are not able to get placement from the employers. Samples of evidence of application are e-mail replies and written document.

With sufficient evidence presented by the student on the difficulties of getting placement, the students could opt for the second part by seeking help from the Internship Coordinator for the University Internship Placement (UIP), Internship Coordinator will try his/her best to look and select for its corporate/industry partners to assist and provide internship placement for the students. Students who opted for UIP have no choice on the type of employer and location as INTERNSHIP COORDINATOR will finalize the placement.

Students are expected to attend job interview sessions during the application period for screening and selection by employers. Students will have to send the **CV, Application Cover Letter** and **APU Support Letter** to the applied company.

Students are encouraged to select companies within Malaysia. However, international students may select companies (sourcing on their own) in their home countries.

Strictly, a student must do his/her internship in one organisation/company only. If you change your organisation/ company in between your internship, you will have to extend your internship period again for a minimum of 16 weeks. You are not allowed to carry forward the internship period that you have done in the other organisation/ company as it will null and void once you resign from the organisation/ company before you finish the internship. In the case where you have completed more than 1 complete cycle (16 weeks) of internship, only one internship report is required for submission and usually the report only includes the first company details. You are allowed to work in different department/ field within the same organisation/ company. At this stage, students are expected to have their own internship CV/Resume ready and available at any time.

## 2.3 Placement, Confirmation, Approval & Orientation

Letter of Appointment/Letter of Offer given by the Host Company must be signed by students if they agreed to it. The placement requires verification and confirmation from the Internship Coordinator and approval from the School. Suitability of the job scopes will be confirmed by



Internship Coordinator by assessing the job scopes and requirements of the host company. Once the application for Internship is successful, the following actions must be carried out by students, Internship Coordinator, School and Host Company:

- a) Student must provide all their placement details (Company Name, Contact Person Name & Email, Company Location) by completing the section of Internship Employment Details and upload the Letter of Offer in Moodle.
- b) To upload a copy of Host Company **Letter of Appointment/Letter of Offer**, completed **Industrial Placement Agreement/Approval Form** (filled in by Host Company) to Moodle
- c) Internship Coordinator will contact and check the authenticity of the company and will immediately get the approval of the school for the said internship placement.
- d) Host Company is to assign a supervisor and provide briefing to the Interns on the expectations, rules, and regulations of the company. Interns will be treated just like any other employee in the company.
- e) Interns to obey and follow all the regulations set by the Host Company

## 2.4 Reporting, Supervision and Maintaining Weekly Log

### a) **Reporting**

Interns are required to report to the Host Company at the specified date and time. The Host Company will ensure that a Company Supervisor is assigned to the intern and proper briefing/orientation on the rules, regulations and policies are given to the intern.

### b) **Supervision**

Each intern will have two supervisors, one supervisor from the Host Company (external) and another one from the University (internal), the Company Supervisor will guide and provide feedback on the student's performance, its weekly logs and internship report during the period of Internship and University Academic supervisor (known as Visit Tutor) will assess the student's performance, its weekly logs and internship duties during the period of Internship. The University Academic supervisor where possible will visit the interns during the Internship period. Only one visit will be conducted unless there is any special request made by the University or the Host Company. For international students who are on internship in their home countries, a video conferencing or tele-conferencing is arranged to determine the performance of the intern.

### c) **Weekly Logs**

Weekly Logs refers to all forms of note takings of all the personal experiences, attendance report and reflections that the Interns had during the internship period. It is the important evidence of the achievement gained at the workplace. Interns must clearly record the supplementary skills and knowledge gained during the internship. Interns are expected to be organised in their work and be diligent in keeping their logbooks complete, signed by the supervisors and accurate for reporting and to be submitted on-time. The practice to use logbook to record industrial experience is in-line with BEM requirement.

Interns must record clearly jobs assigned, problems encountered, details of discussion and job accomplished during the internship. Logbooks should be presented to and signed by the host Company Supervisor on a weekly basis. Interns are also required to submit a complete set of attendance record that has been approved or endorsed by the host company with company stamp (if any).

All signed logbooks should be submitted altogether with the final Internship Report.

## 2.5 Report Submission, Presentation, Evaluation and Grading

### a) Report Submission.

Once the required number of workhours for internship are met or the internship appointment and placement is completed, the intern is now on the last stage of his internship by completing and submitting the needed internship documents to both the School and Internship Coordinator. It is a requirement for intern to report on complex engineering activities and how he/she solved it utilising complex problem-solving in the Technical Report.

Internship Coordinator will check the completion of the portfolios submitted by the Interns, liaise with the employer, and will provide clearance for the administration of Interns presentation, evaluation, and grading by the school. Internship report portfolios must be submitted within the stipulated date and time. Late submission of any report is not allowed unless there is proof of extenuating circumstances.

### b) Presentation.

Upon submission of all the internship portfolios, each intern will do an Oral Presentation of internship experiences for about 15 minutes to Academic supervisor (i.e. Visit Tutor). This presentation is a summary of what student learned from the internship, knowledge and skills acquired during the internship. This will be done in the University once the submission of internship report is done.

### c) Evaluation, Assessment and Grading.

Interns' performance would be evaluated, assessed, and graded depending on the quality and completeness of the internship portfolios submitted, report, logbook and feedback given by the Company Supervisor and Academic supervisor (i.e. Visit Tutor), and finally on their individual Oral Presentation of their internship experiences. The components of evaluation, assessment and grading are stated in the marking rubric below.

### d) Marking Rubric

The marking rubric of the internship report is shown in table below:

Criteria	Fail 0 – 1	Marginal Fail 2 – 3	Pass 4 – 5	Credit 6 – 7	Distinction 8 – 10
Summary Report (10 Marks) [CLO1-PLO3-C6]	Constructed a very poor summary report about the internship. No presence of understanding.	Constructed a poor summary report about the internship. Little presence of understanding.	Constructed a brief summary report about the internship. Moderate presence of understanding.	Constructed a good summary report about the internship. Good presence of understanding.	Constructed an excellent summary report about the internship. Great understanding about the context
	0 – 7	8 – 9	10 – 12	13 – 14	15 – 20

<b>Business Report (20 Marks)</b> [CLO3-PL08-C5]	<b>Explained</b> the business report briefly, but with a lack of understanding.	<b>Explained</b> the business report inadequately, providing a shallow overview without grasping the key concepts.	<b>Explained</b> the business report sufficiently, offering a basic understanding of its contents.	<b>Explained</b> the business report effectively, displaying a clear grasp of the report's key points and significance.	<b>Explained</b> the business report comprehensively, showcasing an in-depth understanding of its content, implications, and relevance within the broader context.
	<b>0 – 7</b>	<b>8 – 11</b>	<b>12 – 16</b>	<b>17 – 23</b>	<b>24 – 20</b>
<b>Technical Report (30 Marks)</b> [CLO4-PL010-A3]	<b>Demonstrated</b> the technical report minimally, lacking a fundamental understanding for the 12 weeks internship.	<b>Demonstrated</b> the technical report inadequately, with only a superficial grasp of its complexities for the 12 weeks internship.	<b>Demonstrated</b> the technical report adequately, showcasing a basic understanding of its key aspects for the 12 weeks internship.	<b>Demonstrated</b> the technical report effectively, displaying a clear understanding of the report's technical intricacies and implications for the 12 weeks internship.	<b>Demonstrated</b> the technical report comprehensively, exemplifying a profound understanding of its content, technical nuances, and broader implications for the 12 weeks internship.
	<b>0 – 1</b>	<b>2 – 3</b>	<b>4 – 5</b>	<b>6 – 7</b>	<b>8 – 10</b>
<b>Logbook (minimum 12 weekly log sheets) (experience) (10 Marks)</b> [CLO5-PL012-C5]	<b>Explained</b> the logbook (experience) briefly, with minimal understanding of the recorded experiences.	<b>Explained</b> the logbook (experience) inadequately, providing only a superficial overview of the documented experiences.	<b>Explained</b> the logbook (experience) adequately, offering a basic understanding of the recorded events and their significance.	<b>Explained</b> the logbook (experience) effectively, demonstrating a clear grasp of the recorded experiences, their context, and relevance.	<b>Explained</b> the logbook (experience) comprehensively, showcasing a profound understanding of the logbook's contents, insights gained, and the broader implications for personal or professional growth.
	<b>0 – 1</b>	<b>2 – 3</b>	<b>4 – 5</b>	<b>6 – 7</b>	<b>8 – 10</b>
<b>Logbook (minimum 12 weekly log sheets) (management) (10 Marks)</b> [CLO6-PL011-C5]	<b>Explained</b> the logbook (management) briefly, with minimal understanding of the recorded experiences.	<b>Explained</b> the logbook (management) inadequately, providing only a superficial overview of the documented experiences.	<b>Explained</b> the logbook (management) adequately, offering a basic understanding of the recorded events and their significance.	<b>Explained</b> the logbook (management) effectively, demonstrating a clear grasp of the recorded experiences, their context, and relevance.	<b>Explained</b> the logbook (management) comprehensively, showcasing a profound understanding of the logbook's contents, insights gained, and the broader implications for personal or professional growth.
	<b>0 – 1</b>	<b>2 – 3</b>	<b>4 – 5</b>	<b>6 – 7</b>	<b>8 – 10</b>
<b>Oral Presentation (10 Marks)</b> [CLO7-PL07-C5]	<b>Concluded</b> the oral presentation abruptly, lacking a clear summary or closure.	<b>Concluded</b> the oral presentation inadequately, offering a brief summary with limited coherence.	<b>Concluded</b> the oral presentation adequately, providing a basic recap of key points discussed.	<b>Concluded</b> the oral presentation effectively, summarizing the main ideas coherently and leaving a lasting impression.	<b>Concluded</b> the oral presentation masterfully, delivering a memorable and impactful summary that encapsulated the core content and left the audience with a strong understanding of the key takeaways.
	<b>0 – 1</b>	<b>2 – 3</b>	<b>4 – 5</b>	<b>6 – 7</b>	<b>8 – 10</b>
<b>Industrial Visit Assessment (10 Marks)</b>	<b>Concluded</b> the industrial visit assessment	<b>Concluded</b> the industrial visit assessment	<b>Concluded</b> the industrial visit assessment	<b>Concluded</b> the industrial visit assessment	<b>Concluded</b> the industrial visit assessment
	<b>0 – 1</b>	<b>2 – 3</b>	<b>4 – 5</b>	<b>6 – 7</b>	<b>8 – 10</b>

<p><b>[CLO2-PLO6-C5]</b></p>	<p>abruptly, offering little to no summary or evaluation.</p>	<p>inadequately, providing a brief summary without meaningful insights.</p>	<p>adequately, offering a basic summary and some evaluation of the visit's significance.</p>	<p>effectively, delivering a concise summary and insightful evaluation of the experience.</p>	<p>brilliantly, providing a comprehensive and thought-provoking summary, coupled with a profound evaluation that showcased a deep understanding of the visit's impact and relevance.</p>
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