

COURSE CONTENT

Academic Year	AY2022/23	Semester	1
Course Coordinator	Dr Lum Kit Meng		
Course Code	EN2901		
Course Title	Professional Attachment 1		
Study Year (if applicable)	2		
Pre-requisites	Year 2 standing		
No of AUs	5		
Contact Hours	10 weeks of training at the internship organisation		
Proposal Date	September 2021		

Course Aims

This 10-week Professional Attachment programme is offered as part of the programme requirement for students reading BEng (Civil) with Work Study Degree Programme.

The purpose of this Professional Attachment is to enable the application of knowledge and skills you have learnt in the university in an authentic work environment. This is such that you can gain relevant exposures and develop practical industry experiences and skills that will facilitate your career decision and future transition into your selected specialisation. It aims for you to develop professional competencies that will enhance your employability and lifelong learning capabilities to support your career and life endeavours and your readiness for the future of work.

Intended Learning Outcomes (ILO)

At the end of this Professional Attachment, you should be able to progressively learn:

I Cognitive

1. Apply knowledge and skills relevantly and appropriately in the workplace.
2. Identify your own competency gaps at the attachment workplace.
3. Evaluate and develop personal learning and development pathways towards bridging competency gaps identified in Point No. 2 above.
4. Develop and apply strategies to solve problems effectively that involves critical thinking and creativity, generating questions, resourcing, application, and reiteration).
5. Evaluate resources and develop insights to make informed judgements and recommendations.

II Context

6. Discuss the internship organisation's nature and context of business.
7. Reflect on the organisational culture at the internship organisation.
8. Appraise the significance and impact of the project/work/assignment undertaken at the internship organisation.
9. Describe the career pathways within the internship organisation as well as the broader industry.
10. Reflect on personal and professional development needs within the attachment organisation as well as the broader industry and set strategic goals for advancing along an intended career path.
11. Apply time and task management strategies effectively.

III Relationship

12. Apply effective written and oral communication skills in professional settings when communicating and connecting with relevant stakeholders.
13. Assimilate into the work environment (people, team, hierarchy) and function effectively.

IV Affective/Moral

14. Tolerate ambiguity and handle anxiety.
15. Contribute proactively to the attachment organisation.
16. Demonstrate responsibility, integrity and professionalism in the fulfilment of all workplace and attachment requirements.
17. Demonstrate the persistence to learn, overcome and improve.

V Technical

18. Use tools that enable and facilitate effective project/work/assignment undertaken at the attachment organisation.
19. Apply project management skills in the realm of large software engineering or hardware projects.

Course Content

This internship programme, being a work-integrated education course, has its educational content embedded within the work environment and assignments that students will undertake at each internship organisation. For this reason, the internship job scope will be evaluated by the school's internship coordinator using the following criteria:

1. It is relevant to the student's discipline of study;
2. It provides the required internship duration;
3. It accommodates NTU's internship periods;
4. It caters to NTU's attachment duration requirement;
5. It provides sufficient structure and rigour that will enable students to achieve the intended learning outcomes listed above;
6. It provides the appropriate workload for the stipulated attachment period;
7. It enhanced the career prospects of the student;
8. The internship workplace is safe and conducive for student learning and development;
9. The internship workplace is equipped with the necessary tools and resources for the internship work;
10. The internship organisation has standing policies to safeguard the welfare of interns;
11. The internship organisation supervisor possesses the competencies, experience, and the commitment to provide guidance to the students;
12. The internship organisation will use NTU's attachment assessment scheme for students.

Assessment

This is a Pass/Fail course with the final outcome determined collectively by your Faculty Supervisor and your Organisation Supervisor.

The assessments will be based on the intended learning outcomes (ILO) as written above and you should familiarise yourself with them as they will be your focus throughout the attachment.

Your Organisation Supervisor will assess your performance at the internship workplace through an evaluation form “Assessment of Work in the Organisation” (AWO). He/She will complete this evaluation at the end of your internship.

Your Faculty Supervisor will facilitate and assess your learning, development, and growth through your E-journal submissions. The E-journals are where you will reflect on your experience, learning, growth and achievement of the relevant ILOs. Keep the ILOs in mind throughout your experience and undertake or seek challenges in the workplace that will provide you with opportunities to acquire experience and document your training on your learning and competencies.

You should maintain a personal journal to log, weekly, your tasks/assignments, skills used/learned, challenges met, solutions derived, networking, as well as other useful notes throughout your internship. Your weekly entry should be between 200 – 500 words. You are to work out a Gantt chart on your internship task/work scope with your supervisors by the end of week 2 and track your progress.

Component	Course LO Tested	Related Programme LO or Graduate Attributes	Weightage	Team/ Individual	Assessment Rubrics
Assessment of Work in the Organisation (AWO) This component evaluates your performance at the workplace.	1, 4, 5, 11, 12, 13, 14, 15, 16, 17, 18, 19	EAB SLO a, b, c, d, e, f, g, h, i, j, k	50	Individual	See Annex 1. Assessed by Organisation Supervisor.
E-Journal 1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	EAB SLO a, b, c, d, e, j, l	10	Individual	See Annex 2. Assessed by Faculty Supervisor.
E-Journal 2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	EAB SLO a, b, c, d, e, j, l	10	Individual	See Annex 2. Assessed by Faculty Supervisor.
Final E-Journal	1,2, 3, 4,5, 6, 7, 8, 9, 10	EAB SLO a, b, c, d, e, j, l	30	Individual	See Annex 3 Assessed by Faculty Supervisor.
Total			100%		

Mapping of Course SLOs to EAB Graduate Attributes

Course Student Learning Outcomes	Cat	EAB's 12 Graduate Attributes*											
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
EN2901 Professional Attachment 1	Core	■	■	■	■	■	■	■	■	■	■	■	■
Overall Statement	<p>The purpose of this Professional Attachment is to enable the application of knowledge and skills you have learnt in the university in an authentic work environment. This is such that you can gain relevant exposures and develop practical industry experiences and skills that will facilitate your career decision and future transition into your selected vocation. It aims for you to develop professional competencies that will enhance your employability and lifelong learning capabilities to support your career and life endeavours and your readiness for the future of work.</p>												
<p>1. Apply knowledge and skills relevantly and appropriately in the workplace.</p> <p>Identify and bridge your own competency gaps at the attachment workplace.</p> <p>Evaluate and develop personal learning and development pathways towards bridging competency gaps identified in point (2) above.</p> <p>Develop and apply strategies to solve problems effectively (involves critical thinking and creativity, generating questions, resourcing, application, and reiteration).</p> <p>Evaluate resources and develop insights to make informed judgements and recommendations.</p>	a, d, f, h, l												
2. Discuss the attachment organisation's nature and context of business.	f, i, l												

<p>Contribute proactively to the attachment organisation.</p> <p>Reflect on the organisational culture at the attachment organisation.</p> <p>Describe the career pathways within the attachment organisation as well as the broader industry.</p> <p>Reflect on personal and professional development needs within the attachment organisation as well as the broader industry and set strategic goals for advancing along an intended career path.</p>	
<p>3. Apply effective written and oral communication skills in professional settings when communicating and connecting with relevant stakeholders.</p> <p>Assimilate into the work environment (people, team, hierarchy) and function effectively.</p>	f, h, i, j
<p>4. Tolerate ambiguity and handle anxiety.</p> <p>Demonstrate responsibility, integrity and professionalism in the fulfilment of all workplace and attachment requirements.</p> <p>Demonstrate the persistence to learn, overcome and improve.</p>	d, f, g, h, i
<p>5. Apply project management skills in the realm of large software engineering or hardware projects.</p> <p>Apply time and task management strategies effectively.</p>	a, b, c, d, e, k

<p>6. Appraise the significance and impact of the project/work/assignment undertaken at the attachment organisation. Use tools that enable and facilitate effective project/work/assignment undertaken at the attachment organisation.</p>	<p>c, e, g, h</p>
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Legend:

- Fully consistent (contributes to more than 75% of Student Learning Outcomes)
- Partially consistent (contributes to about 50% of Student Learning Outcomes)
- Weakly consistent (contributes to about 25% of Student Learning Outcomes)

*The graduate attributes as stipulated by the EAB, are:

- a. **Engineering knowledge:** Apply the knowledge of mathematics, natural science, engineering fundamentals, and an engineering specialisation to the solution of complex engineering problems.
- b. **Problem Analysis:** Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- c. **Design/development of Solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
- d. **Investigation:** Conduct investigations of complex problems using research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- e. **Modern Tool Usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
- f. **The engineer and Society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- g. **Environment and Sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for the sustainable development.
- h. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- i. **Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary settings.
- j. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

- k. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and economic decision-making, and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- l. **Life-long Learning:** Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Formative feedback

Continuous feedback on progress and performance can be expected from student's Internship organisation supervisor.

Students Faculty Supervisor will also provide feedback through the student's internship E-journal submissions and/or site visits.

Learning and Teaching approach

An internship is an experiential learning programme done in a professional setting. Students will be placed in an organisation for the entire internship period and will undertake work assignments and/or projects in the organisation. It is through such work in the real-world environment where students learn and develop the competencies and experiences relevant to the intended learning outcomes of this course.

Each student will be supervised by

- (1) an Organisation Supervisor at the internship organisation, and
- (2) a Faculty Supervisor in NTU.

The Organisation Supervisor will be the key person working with and interacting with you on a day-to-day basis. The Organisation Supervisor will be one providing guidance and feedback to the student on a regular basis.

The Faculty Supervisor from NTU will serve to facilitate your learning and progress through interactions via E-journal submissions, email, phone, and/or visits. The Faculty Supervisor will also be each student's first point of contact for any matters arising from the internship. Student can also contact the respective internship Programme Manager at NTU's Career and Attachment Office as an alternative.

Reading and References

NTU Student Internship Handbook

Please refer to the respective Professional Internship/Attachment Teamsites via NTU Studentlink for the Internship Handbook.

NTU Work-Integrated Education Blog - WIE ARISE

<https://blogs.ntu.edu.sg/wie-arise>

Harvard Business Review: 6 Ways to Make the Most of Your Internship

<http://bit.ly/2J81BU2>

Huffington Post: 21 Ways to Make the Most of Your Internship

<http://bit.ly/2kK6Fz5>

Vault: How to Successfully Manage your Assignments:

<http://bit.ly/2LNfrIX>

Course Policies and Student Responsibilities

Please refer to the respective Professional Internship/Attachment Teamsites via NTU Studentlink for detailed Internship Policy and Procedures.

Further information can be obtained from NTU's Career and Attachment Office (CAO) via cao_internship@ntu.edu.sg.

Professional and Academic Integrity

An internship concerns work in a professional setting. As with good academic work, good professional work depends on honesty and ethical behaviour. The quality of your work as a student relies on adhering to the principles of professional and academic integrity and to the NTU Honour Code, a set of values shared by the whole university community. Truth, Trust and Justice are at the core of NTU's shared values.

As a student, it is important that you recognize your responsibilities in understanding and applying the principles of integrity in all the work you do as a student of NTU. Not knowing what is involved in maintaining integrity does not excuse professional and academic dishonesty. You need to actively equip yourself with strategies to avoid all forms of professional and academic dishonesty, including and not limited to, plagiarism, fraud, collusion and cheating. If you are uncertain of the definitions of any of these terms, you should go to the academic integrity website for more information. Consult your NTU Tutor if you need any clarification about the requirements of professional and academic integrity in the course.

Course Instructors

Your Faculty Supervisor for the period of your internship will be allocated to you after the placement process is completed.

This internship course is managed and administered by your school's internship course coordinator as well as NTU's Career & Attachment Office.

Planned Weekly Schedule

Your internship work schedule will follow that provided by your internship Organisation.

Annex 1: Assessment Rubrics for Assessment of Work in the Organisation (AWO)

Criteria for the assessment of student performance in the internship organisation by the organisation supervisor:

ILOs	Focus	Criteria
1	Knowledge and Skills	Able to apply knowledge and skills (whether prior or newly learned) appropriately in the workplace and/or projects/tasks.
4	Problem-solving	Able to solve problems systematically and effectively.
5	Resourcefulness	Able to source for relevant information to make informed judgement, decisions and/or recommendations.
11	Time and Task Management	Able to plan, organise, manage and complete assignments effectively and in a timely manner.
12	Written and Oral Communication	Able to communicate effectively and appropriately in writing and verbally.
13	Team Work	Able to function effectively with other colleagues/stakeholders in the work environment.
14	Adaptability	Able to function effectively under ambiguity and/or change.
15	Initiative	Able to remain consistently pro-active towards contributing to the work and/or organisation.
16	Responsibility	Consistently demonstrates commitment, responsibility, integrity, professionalism and ethical behaviour at the workplace.
17	Persistence to Learn and Improve	Consistently demonstrates persistence and grit to overcome challenges, to learn and improve continuously at the workplace.
18	Fluency with Tools	Able to use tools, whether software or hardware tools, (and learn new ones where necessary) proficiently to accomplish tasks and assignments.

Annex 2: Assessment Rubrics for E-Journal 1 and E-Journal 2

You are required to submit a total of two E-journals and one Final E-Journal documenting and reflecting on your internship experience in relation to the relevant intended learning outcomes of this course for each work term under the NTU Work Study Degree Programme

E-Journal 1 and E-Journal 2 will be assessed in Week 3 and 6 (for 10/11 weeks internships) or Week 6 and 12 (for semester-long internships) respectively during the internship. These are purposed to be formative assessments where you will receive feedback on your progress.

For each of these E-journal submissions, you are to choose 3 ILOs from the list provided and present evidences and reflections on each one.

- Evidences can be provided in the form of text descriptions, photographs, or drawings (ensure you seek clearance from your internship organisation should sensitive information be involved).
- Reflect critically on the evidences and the experience producing them, relating them to how they demonstrated your achievement of the specific ILO (or how they helped you to do so): Particularly but should not be limited to - what were the tasks (or observations) and their contexts, actions taken (or lessons drawn) by you and their reasons, and results achieved? What did you learn (e.g. information, knowledge, skills)? Evaluate your own capabilities and attitude where appropriate.
- E-Journal 2 should focus on 3 other ILOs not already covered in E-Journal 1.
- If you wish to provide further evidences and reflections on ILOs which you have covered in an earlier e-journal submission, you are encouraged to do so. Such new evidence(s) and reflection(s) should demonstrate your development and growth.

Criteria for E-Journal 1 and E-Journal 2 (10% each)

Focus	Criteria
Achievement of ILO	Conclusive achievement of ILO. Able to be give critical and thoughtful reflection on the experience of achieving the ILO with sufficient supporting evidence. Clear and concise articulation of thoughts.

Annex 3: Assessment Rubrics for Final E-Journal

Your Final E-Journal submission will be assessed towards the end of your internship (i.e. Week 10 for 10/11 week-long internships; Week 20 for 20 week-long internship)

For this final submission, your focus is to cover the remaining 4 ILOs and present evidences and reflections on them. In addition, an overall reflection on your internship experience as a whole is expected:

- Evidences can be in the form of text descriptions, photographs, or drawings (ensure you seek clearance from your internship organisation should sensitive information be involved).
- Reflect critically on the evidences and the experience producing them, relating them to how they demonstrated your achievement of each ILO (or how they helped you to do so): Particularly but should not be limited to - what were the tasks (or observations) and their contexts, actions taken (or lessons drawn) by you and their reasons, and results achieved? How are the achievements validated (by supervisor, colleagues, stakeholders, etc.)? What did you learn (e.g. knowledge, skills)? How will you do things differently and better?
- If you wish to provide further evidences and reflections on ILOs which you have covered in E-Journal 1 and E-Journal 2, you are encouraged to do so. Such new evidence(s) and reflection(s) should demonstrate your development and growth.
- Your overall internship reflection will include but not limited to: Your overall experience in the internship, what are your strengths and weaknesses? Did the experience affirm or revealed them? How will you build up your strengths and reduce your weaknesses? How do you now view this industry and this sort of work? What alternatives will you consider? Knowing what you now know, what are your tentative career plans after graduation? What will you do from this point onwards to put those plans in act?

Criteria for Final E-Journal submission (30%):

Achievement of ILO	Conclusive achievement of ILO. Able to be give critical and thoughtful reflection on the experience of achieving the ILO with sufficient supporting evidence. Clear and concise articulation of thoughts
Overall Internship Reflection	Clear and critical reflection on the internship experience as a whole.

Annex 4: Assessment Rubrics for Final E-Journal (For PA Winter only)

Your Final E-Journal submission will be assessed at the end of your 5-week internship.

For this submission, your focus is for all the ILOs and present evidences and reflections on them. In addition, an overall reflection on your internship experience as a whole is expected:

- Evidences can be in the form of text descriptions, photographs, or drawings (ensure you seek clearance from your internship organisation should sensitive information be involved).
- Reflect critically on the evidences and the experience producing them, relating them to how they demonstrated your achievement of each ILO (or how they helped you to do so): Particularly but should not be limited to - what were the tasks (or observations) and their contexts, actions taken (or lessons drawn) by you and their reasons, and results achieved? How are the achievements validated (by supervisor, colleagues, stakeholders, etc.)? What did you learn (e.g. knowledge, skills)? How will you do things differently and better?
- Your overall internship reflection will include but not limited to: Your overall experience in the internship, what are your strengths and weaknesses? Did the experience affirm or revealed them? How will you build up your strengths and reduce your weaknesses? How do you now view this industry and this sort of work? What alternatives will you consider? Knowing what you now know, what are your tentative career plans after graduation? What will you do from this point onwards to put those plans in act?

Criteria for Final E-Journal submission (50%):

Achievement of ILO	Conclusive achievement of ILO. Able to be give critical and thoughtful reflection on the experience of achieving the ILO with sufficient supporting evidence. Clear and concise articulation of thoughts
Overall Internship Reflection	Clear and critical reflection on the internship experience as a whole.

Summary of Timeline for E-Journal Submissions

Internship	E-Journal 1	E-Journal 1	Final E-Journal
PI	Week 6	Week 12	Week 20
PA	Week 3	Week 6	Week 10
PA (Winter) (For WSDeg students only)	N.A.		Week 5

E-journal rubrics:



E-journal Guide.docx



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OBTL%20Assessment