

Annexe A: New/Revised Course Content in OBTL+ Format

Course Overview

The sections shown on this interface are based on the templates [UG OBTL+](#) or [PG OBTL+](#)

If you are revising/duplicating an existing course and do not see the pre-filled contents you expect in the subsequent sections e.g. Course Aims, Intended Learning Outcomes etc. please refer to [Data Transformation Status](#) for more information.

Expected Implementation in Academic Year	2024
Semester/Trimester/Others (specify approx. Start/End date)	Semester 1 Semester 2
Course Author * Faculty proposing/revising the course	Lai Ru Ying
Course Author Email	rylai@ntu.edu.sg
Course Title	Professional Internship
Course Code	CM4081
Academic Units	10
Contact Hours	800
Research Experience Components	Not Applicable

Course Requisites (if applicable)

Pre-requisites	CM3062
Co-requisites	
Pre-requisite to	
Mutually exclusive to	
Replacement course to	
Remarks (if any)	

Course Aims

At the successful completion of the Professional Internship, you (as a student) should be able to:

I. Cognitive

1. Apply knowledge and skills relevantly and appropriately in the workplace. [Analyse, model and solve problems.]
2. Identify your own competency gaps at the internship workplace.
3. Evaluate and develop personal learning and development pathways towards bridging competency gaps identified in point (2) above. [Readily pick up new skills to tackle new problems.]
4. Develop and apply strategies to solve problems effectively. [Involves critical thinking and creativity, generating questions, resourcing, application and reiteration.]
5. Evaluate resources and develop insights to make informed judgements and recommendations. [Identify relevant knowledge, skills needed to solve problems.]

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 internship 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. [Communicate effectively with team members when working in a group and contribute as a valued team member when working in a group]

IV. Affective/Moral

14. Tolerate ambiguity and handle anxiety.
15. Contribute proactively to the internship organisation.
16. Demonstrate responsibility, integrity and professionalism in the fulfilment of all workplace and internship 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 internship organisation.
19. Understand how the field of chemistry fits into your attachment position.
20. Demonstrate knowledge of the scientific competencies of the internship organisation.

Course's Intended Learning Outcomes (ILOs)

Upon the successful completion of this course, you (student) would be able to:

ILO 1	Apply knowledge and skills relevantly and appropriately in the workplace. [Analyse, model and solve problems.]
ILO 2	Identify your own competency gaps at the internship workplace.
ILO 3	Evaluate and develop personal learning and development pathways towards bridging competency gaps identified in point (2) above. [Readily pick up new skills to tackle new problems.]
ILO 4	Develop and apply strategies to solve problems effectively. [Involves critical thinking and creativity, generating questions, resourcing, application and reiteration.]
ILO 5	Evaluate resources and develop insights to make informed judgements and recommendations. [Identify relevant knowledge, skills needed to solve problems.]
ILO 6	Discuss the internship organisation's nature and context of business.
ILO 7	Reflect on the organisational culture at the internship organisation.
ILO 8	Appraise the significance and impact of the project/work/assignment undertaken at the internship organisation.
ILO 9	Describe the career pathways within the internship organisation as well as the broader industry.
ILO 10	Reflect on personal and professional development needs within the internship organisation as well as the broader industry and set strategic goals for advancing along an intended career path.
ILO 11	Apply time and task management strategies effectively.
ILO 12	Apply effective written and oral communication skills in professional settings when communicating and connecting with relevant stakeholders.
ILO 13	Assimilate into the work environment (people, team, hierarchy) and function effectively. [Communicate effectively with team members when working in a group and contribute as a valued team member when working in a group]
ILO 14	Tolerate ambiguity and handle anxiety.
ILO 15	Contribute proactively to the internship organisation.
ILO 16	Demonstrate responsibility, integrity and professionalism in the fulfilment of all workplace and internship requirements.

ILO 17	Demonstrate the persistence to learn, overcome and improve.
ILO 18	Use tools that enable and facilitate effective project/work/assignment undertaken at the internship organisation.
ILO 19	Understand how the field of chemistry fits into your attachment position.
ILO 20	Demonstrate knowledge of the scientific competencies of the internship organisation.

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 course instructor/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 provides sufficient structure and rigour that will enable students to achieve the intended learning outcomes listed above; 5. It provides the appropriate workload for the stipulated internship period; 6. It enhanced the career prospects of the student; 7. The internship workplace is safe and conducive for student learning and development; 8. The internship workplace is equipped with the necessary tools and resources for the internship work; 9. The internship organisation has standing policies to safeguard the welfare of interns; 10. The internship organisation supervisor possesses the competencies, experience, and commitment to provide guidance to the students; 11. The internship organisation will use NTU's internship assessment scheme for students.

Reading and References (if applicable)

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>

Planned Schedule

Week or Session	Topics or Themes	ILO	Readings	Delivery Mode	Activities
1	-	-		In-person	Weekly updating e-Journal / logbook
2	Completion of Gantt chart (E-mail contact with NTU supervisor)			In-person	Weekly updating e-Journal / logbook
3	-	-		In-person	Weekly updating e-Journal / logbook
4	-			In-person	Weekly updating e-Journal / logbook
5	-	-		In-person	Weekly updating e-Journal / logbook
6	-	-		In-person	Weekly updating e-Journal / logbook
7	-	-		In-person	Weekly updating e-Journal / logbook
8	-	-		In-person	Weekly updating e-Journal / logbook
9	-	-		In-person	Weekly updating e-Journal / logbook

Week or Session	Topics or Themes	ILO	Readings	Delivery Mode	Activities
10	Review of e-journal / logbook and performance in first 10 weeks.			In-person	Weekly updating e-Journal / logbook
11	-	-		In-person	Weekly updating e-Journal / logbook
12	-	-		In-person	Weekly updating e-Journal / logbook
13	-	-		In-person	Weekly updating e-Journal / logbook
14	-	-		In-person	Weekly updating e-Journal / logbook
15	-	-		In-person	Weekly updating e-Journal / logbook
16	-	-		In-person	Weekly updating e-Journal / logbook
17	-	-		In-person	Weekly updating e-Journal / logbook
18	-	-		In-person	Weekly updating e-Journal / logbook

Week or Session	Topics or Themes	ILO	Readings	Delivery Mode	Activities
19	-	-		In-person	Weekly updating e-Journal / logbook
20	Final Report	-		In-person	Weekly updating e-Journal / logbook

Learning and Teaching Approach

Approach	How does this approach support you in achieving the learning outcomes?
Internship	<p>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.</p> <p>Each student will be supervised by (1) an Organisation Supervisor at the internship organisation, and (2) a Faculty Supervisor in NTU.</p> <p>The Organisation Supervisor will be the key person working with and interacting with the student on a day-to-day basis. The Organisation Supervisor will be one providing guidance and feedback to the student on a regular basis.</p> <p>The Faculty Supervisor from NTU will serve to facilitate student's 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.</p>

Assessment Structure

Assessment Components (includes both continuous and summative assessment)

No.	Component	ILO	Related PLO or Accreditation	Weightage	Team/Individual	Rubrics	Level of Understanding
1	Continuous Assessment (CA): Others([group or individual projects/evaluations] 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, 20	1a, 1b, 1c, 2a, 2b, 3a, 3b, 4a, 4b, 5a, 5b, 5c	50	Individual	Holistic	Not Applicable
2	Continuous Assessment (CA): Others([assignments (e.g. term paper, essay)] E-Journal 1)	1, 6, 7	1a, 1b, 1c, 3a, 3b, 4a, 4b, 5a, 5b, 5c	10	Individual	Holistic	Not Applicable
3	Continuous Assessment (CA): Others([assignments (e.g. term paper, essay)] E-Journal 2)	2,4,5	1a, 1b, 1c, 2a, 2b, 3a, 3b, 4a, 4b, 5a, 5b, 5c	10	Individual	Holistic	Not Applicable
4	Continuous Assessment (CA): Others([assignments (e.g. term paper, essay)] Final E-Journal)	3,8,9,10	1a, 1b, 1c, 2a, 2b, 3a, 3b, 4a, 4b, 5a, 5b, 5c	30	Individual	Holistic	Not Applicable

Description of Assessment Components (if applicable)

NA

Formative Feedback

<p>Continuous feedback on progress and performance can be expected from student's internship organisation supervisor.</p> <p>Student's faculty supervisor will also provide feedback through the student's internship e-journal submissions and/or site visits.</p>

NTU Graduate Attributes/Competency Mapping

This course intends to develop the following graduate attributes and competencies (maximum 5 most relevant)

Attributes/Competency	Level
Adaptability	Intermediate
Collaboration	Intermediate
Decision Making	Intermediate
Learning Agility	Intermediate
Self-Management	Intermediate

Course Policy

Policy (Academic Integrity)

Good academic work depends on honesty and ethical behaviour. The quality of your work as a student relies on adhering to the principles of 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 academic integrity in all the work you do at NTU. Not knowing what is involved in maintaining academic integrity does not excuse academic dishonesty. You need to actively equip yourself with strategies to avoid all forms of academic dishonesty, including plagiarism, academic 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. On the use of technological tools (such as Generative AI tools), different courses / assignments have different intended learning outcomes. Students should refer to the specific assignment instructions on their use and requirements and/or consult your instructors on how you can use these tools to help your learning. Consult your instructor(s) if you need any clarification about the requirements of academic integrity in the course.

Policy (General)

0

Policy (Absenteeism)

0

Policy (Others, if applicable)

Please refer to the respective Professional Internship/Attachment Teamsites via NTU Student Intranet 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.

Diversity and Inclusion Policy

Integrating a diverse set of experiences is important for a more comprehensive understanding of science and engineering.

It is our goal to create an inclusive and collaborative learning environment that supports a diversity of perspectives and learning experiences. That honours your identities; including ethnicity, gender, socioeconomic status, sexual orientation, religion or ability.

To help accomplish this:

- If you are neuroatypical or neurodiverse, have dyslexia or ADHD (for example), or have a social anxiety disorder or social phobia;
- If you feel your performance in the course is being impacted by your experiences outside of class;
- If something was said in the course (by anyone, including instructor/supervisor) that made you uncomfortable.

Please e-mail to your Associate Chair (Students & Continuing Education) at ac-cceb-stud@ntu.edu.sg about how we can help facilitate your learning experience.

As a participant in course discussions you should also strive to honour the diversity of your classmates. You can do this by; using preferred pronouns and names; being respectful of others opinions and actively making sure all voices are being heard; and refraining from the use of derogatory or demeaning speech or actions.

All members of the course are expected to strictly adhere to the student code of conduct (<https://www.ntu.edu.sg/life-at-ntu/student-life/student-conduct>) . If you witness something that goes against this or have any other concerns, please speak to your instructors or a faculty member.

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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 [Scientific approach to problem solving]	Able to apply knowledge and skills (whether prior or newly learned) appropriately in the workplace and/or projects/tasks. [Able to put together analytical, laboratory and/or computational skills to solve quantitative problems.]
4	Problem-solving	Able to solve problems systematically and effectively.
5	Resourcefulness [Awareness of relevant knowledge, skills needed]	Able to source for relevant information to make informed judgement, decisions and/or recommendations. [Able to handle information critically and propose systematic approaches to handling problems.]
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 [Particularly technological tools.]	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.
19	Relationship to fundamental chemistry	Understand how chemistry relates to the attachment
20	Core scientific competencies of industry	Demonstrate a knowledge of the expertise of the internship organisation

Please see assessment rubrics details attached.

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

You are required to submit a total of two (2) E-Journals and one (1) final E-Journal documenting and reflecting on your internship experience in relation to the relevant intended learning outcomes of this course.

The first two (2) E-Journals (E-Journal 1 and E-Journal 2) will be assessed in week 6 and week 12 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 present evidences and reflections on each of the three (3) ILOs indicated in section D above. The journal template will be provided to you by CAO.

- 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 another 3 ILOs as indicated.
- 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 (Week 6)

Focus	Criteria
Reflection on each ILO	Critical and thoughtful reflection on the experience of achieving the ILO. Clear and concise articulation of thoughts.

Please see assessment rubrics details attached.

Criteria for E-Journal 2 (Week 12)

Focus	Criteria
Reflection on each ILO	Critical and thoughtful reflection on the experience of achieving the ILO. Clear and concise articulation of thoughts.

Please see assessment rubrics details attached.

**Annex 3:
Assessment Rubrics for Final E-Journal.**

Your Final Report submission will be assessed at the end of your internship.

For this final submission, your focus is to cover the remaining ILOs listed 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%):

Focus	Criteria
Reflection on each ILO	Critical and thoughtful reflection on the experience of achieving the ILO. Clear and concise articulation of thoughts.
Overall Internship Reflection	Clear and critical reflection on the internship experience as a whole.

Please see assessment rubrics details attached.