

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

Course Overview

Expected Implementation in Academic Year (New format)	AY2025-2026
Semester/Trimester/Others (specify approx. Start/End date)	Semester 2
Course Author * Faculty proposing/revising the course	Assoc Prof Janelle Thompson
Course Author Email	Janelle.thompson@ntu.edu.sg
Course Title	E2S2 RESEARCH
Course Code	ES3008
Academic Units	3
Contact Hours	39
Research Experience Components	Research Defined Course (at least 50% of deliverables involve practical research activities: problem identification, hypothesis forming, data collection/analysis/interpretation, result communication)

Course Requisites (if applicable)

Pre-requisites	By permission from the faculty supervisor
Co-requisites	NIL
Pre-requisite to	NIL
Mutually exclusive to	NIL
Replacement course to	NIL
Remarks (if any)	

Course Aims

The goal of this course is to have you participate in research in close collaboration with a faculty, post-graduate student, or researcher. You will learn laboratory methods, about the scientific method, and about the specific project you are working on. You will gain a background in a specific scientific problem or research topic, learn about how this will be addressed, and participate in the research required to address this topic. This course will include a self-contained research project that can be completed over one semester. Continuing research over more semesters must include discrete projects that can be part of a greater whole. You may work on a project designed by your faculty supervisor or of your own design, with approval from their faculty supervisor. As part of this course, you must design a research-style report or poster for display, and deliver a short presentation regarding your research.

Course's Intended Learning Outcomes (ILOs)

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

ILO 1	Formulate appropriate research questions and coordinate and develop a methodology to test them, including, a) safety and risk assessments, b) liaising with researchers, and c) managing your own time efficiently
ILO 2	Apply the methodology in the lab, field or data collection or processing situation
ILO 3	Collect sufficient data for analysis
ILO 4	Analyse and interpret quantitative or qualitative data
ILO 5	Communicate these findings both orally and in writing
ILO 6	Manage your project effectively, including time, resources and other people

Course Content

Course content will vary depending on the faculty member the student wishes to work with, and the subject of research. The faculty member should define at the start of the semester the format of the final report (written or poster) and presentation.

Reading and References (if applicable)

Reading materials will be specific to each project. Suggestions for wider reading will be given by the faculty supervisor. Students will also be required to complete a literature review/topical essay, which will reveal many of the key texts applicable to your project.

Planned Schedule

Week or Session	Topics or Themes	ILO	Delivery Mode	Activities	Readings
1	The schedule for research will be decided between the student and supervisor	1, 2, 3, 4, 5, 6		Varies, See course content	Varies, See course content

Learning and Teaching Approach

Approach	How does this approach support you in achieving the learning outcomes?
Active Learning	Students gain responsibility for their project, higher level critical thinking and creative problem solving to address the rigours of completing a research project. You will also develop confidence in your subject material, which will greater aid your presentation abilities. Students will be supported in your active learning by your faculty supervisor, and your peers.

Assessment Structure

Assessment Components (includes both continuous and summative assessment)

No.	Component	ILO	Related PLO or Accreditation	Weightage	Description of Assessment Component	Team/Individual	Rubrics	Level of Understanding
1	Continuous Assessment (CA): Others(Literature review/ Assigned readings)	1, 3, 4, 5, 6	Knowledge; Intellectual flexibility and critical thinking; Passion and communication; Research; Interdisciplinary	10		Individual	Holistic	Extended Abstract
2	Continuous Assessment (CA): Others(Demonstration of laboratory/ field/data collection or processing competence.)	2, 3, 4, 5, 6	Intellectual flexibility and critical thinking; Formulating questions; Passion and communication; Research; Problem solving; Interdisciplinary; Lifelong learning; Values, Collaboration and leadership.	30		Individual	Holistic	Relational
3	Continuous Assessment (CA): Report/Case study(Final written report)	1, 2, 3, 4, 5, 6	Knowledge; Intellectual flexibility and critical thinking; Passion and communication; Research; Problem solving; Interdisciplinary.	30		Individual	Holistic	Extended Abstract

No.	Component	ILO	Related PLO or Accreditation	Weightage	Description of Assessment Component	Team/Individual	Rubrics	Level of Understanding
4	Continuous Assessment (CA): Others(Final oral presentation)	1, 2, 3, 4, 5, 6	Knowledge; Intellectual flexibility and critical thinking; Passion and communication; Research; Problem solving; Interdisciplinary.	30		Individual	Holistic	Extended Abstract

Description of Assessment Components (if applicable)

Formative Feedback

Students will receive either written or verbal formal feedback from their faculty Supervisor(s) following each assessment criteria.

NTU Graduate Attributes/Competency Mapping

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

Attributes/Competency	Level
Care for Environment	Intermediate
Collaboration	Advanced
Communication	Intermediate
Curiosity	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)

Students are expected to complete all assigned pre-class readings and activities, attend all lab sessions/field work appointments/seminar classes punctually and take all scheduled assignments and tests by due dates. Students are expected to take responsibility to follow up with course notes, assignments and course related announcements for seminar sessions they have missed. Students are expected to participate in all discussions and activities.

Policy (Absenteeism)

Absence from scheduled lab sessions/field work appointments/seminar classes without a valid reason will affect your overall course grade. Valid reasons include falling sick supported by a medical certificate. There will be limited make-up opportunities.

Policy (Others, if applicable)

Diversity and inclusion policy

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

It is our goal at ASE to create an inclusive and collaborative learning environment that supports a diversity of perspectives and learning experiences, and 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 like your performance in the class is being impacted by your experiences outside of class;
- If something was said in class (by anyone, including the instructor) that made you feel uncomfortable;

Please speak to your teaching team, a peer or senior, Natasha or Fadhila (either in-person or via email) 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 class are expected to adhere to the NTU anti-harassment policy. if you witness something that goes against this or have any other concerns, please speak to your instructors or an ASE faculty member.

Last Updated Date: 26-03-2026 10:29:44

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