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

## Course Overview

| | |
|---|---|
| Expected Implementation in Academic Year | 2025-26 |
| Semester/Trimester/Others (specify approx. Start/End date) | Semester 1 |
| Course Author<br>* Faculty proposing/revising the course | Lee-Chua Lee Hong |
| Course Author Email | clhlee@ntu.edu.sg |
| Course Title | Sustainability Management and Reporting |
| Course Code | EN4107 |
| Academic Units | 3 |
| Contact Hours | 39 |
| Research Experience Components | Not Applicable |

## Course Requisites (if applicable)

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

## Course Aims

This course aims to provide the students with knowledge and skills to facilitate an informed complex decision-making process in Environment, Social and Governance ("ESG")/sustainability.

This module will apply the triple bottom line model in explaining how businesses can use the different toolkits to balance the 3P module in line with the ESG framework for running a business sustainably:

1. People (Health and Human Rights)
2. Planet (Environment)
3. Profit (Business decision making and risk management)

After taking this course, the students should know basic business sustainability concepts, such as ESG, SDGs, and sustainable business models. Meanwhile, students can also learn how to prepare the environmental impact and product life cycle analysis considering environmental, health and social risks, and how to manage those risks soundly to help business' decision-making.

## Course's Intended Learning Outcomes (ILOs)

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

| | |
|---|---|
| ILO 1 | Understand the definition of Sustainability, ESG and GHG Emission.<br>With key international and local regulations and concerns in the new era of sustainability. |
| ILO 2 | Understand the current regional and global trend and regulations on ESG and GHG Emission and key ESG disclosure method. |
| ILO 3 | Understand the process and components in preparing a quality sustainability report. |
| ILO 4 | Understand the GHG Emission, conduct organization carbon accounting, product life cycle analysis and carbon footprint. |
| ILO 5 | Assess for sustainability-related risks and explain why these non-financial risks are critical to the organization. |
| ILO 6 | Define the relevant United Nations Sustainable Develop Goals ("SDGs") to the organization can contribute to.<br>Help the company set up ESG and sustainable development framework,<br>map environment sustainability and Environmental Management Systems (EMS). |
| ILO 7 | Understand how company can contribute to the GHG emission reduction and net-zero emission roadmap. |

## Course Content

| No | Topics | Lecture Hour |
|---|---|---|
| 1 | Course overview and Introduction of Sustainability/ESG Development | 3 |
| 2 | Sustainability Reporting and ESG Disclosure | 3 |
| 3 | ESG and Climate Risk Identification and Analysis | 3 |
| 4 | Social Content in ESG Disclosure, Labour, Human Rights and Other Social Factors | 3 |
| 5 | Introduction of Climate Change and Carbon Emission | 3 |
| 6 | Organizational GHG Reporting (Scope 1, 2 and 3) | 3 |
| 7 | Industry Ecology and Life Cycle Analysis | 3 |
| 8 | Green Process Design: Circular Economy and Green the Supply Chain | 3 |
| 9 | Corporate Sustainability Strategy Set up | 3 |
| 10 | Sustainable Business Module and Financing | 3 |
| 11 | Singapore Sustainable Development and the Foundation of Sustainability Strategy Setting: EIA and EMS | 3 |
| 12 | Group Presentation | 6 |
| | Total | 39 |

## Reading and References (if applicable)


1. UN SDGs: https://sdgs.un.org/goal

2. GRI Standard https://www.globalreporting.org/standards/

3. The Ten Principles of the UN Global Compact

   https://www.unglobalcompact.org/what-is-gc/mission/principles

4. GHG Protocal: https://ghgprotocol.org/

5. TCFD: https://www.fsb-tcfd.org/

6. Singapore Green Plan: https://www.greenplan.gov.sg/

7. National Environmental Agency: https://www.nea.gov.sg/

8. El-Haggar, S., Samaha, A.(2019).Roadmap for global sustainability - rise of the green communities, Cham : Springer International Publishing : Imprint: Springer.

9. Wood, C. (2002). Environmental impact assessment : A comparative review.. Harlow, England ; New York : Prentice Hall.

10. Epstein, Marc J.; Buhovac, Adriana Rejc; Elkington, John; Leonard, Herman B. "Dutch" (2014). Making sustainability work: Best practices in managing and measuring corporate social, environmental, and economic impacts. Oakland,US: Routledge.

11. Hundloe, T.(2021). Environmental impact assessment: Incorporating sustainability principles (1st 2021. ed.). Springer International Publishing.


Note : The above listing comprises the foundational readings for the course, and more up-to-date relevant readings will be provided when they become available.

## Planned Schedule

| Week or Session | Topics or Themes | ILO | Readings | Delivery Mode | Activities |
|---|---|---|---|---|---|
| 1 | Course overview and Introduction of Sustainability/ESG Development | 1, 2, 7 | Lecture Slides and relevant materials listed in Reading and References | In-person | Lecture |
| 2 | Sustainability Reporting and ESG Disclosure | 1, 2, 6 | Lecture Slides and relevant materials listed in Reading and References | In-person | lecture |
| 3 | ESG and Climate Risk Identification and Analysis | 2, 5 | Lecture Slides and relevant materials listed in Reading and References | In-person | Lecture |
| 4 | Social Content in ESG Disclosure, Labour, Human Rights and Other Social Factors | 2, 5, 6 | Lecture Slides and relevant materials listed in Reading and References | In-person | Lecture |
| 5 | Introduction of Climate Change and Carbon Emission | 1,7 | Lecture Slides and relevant materials listed in Reading and References | In-person | Lecture |
| 6 | Organizational GHG Reporting (Scope 1, 2 and 3) | 1, 7 | Lecture Slides and relevant materials listed in Reading and References | In-person | Lecture |
| 7 | Industry Ecology and Life Cycle Analysis | 4, 7 | Lecture Slides and relevant materials listed in Reading and References | In-person | Lecture |

| Week or Session | Topics or Themes | ILO | Readings | Delivery Mode | Activities |
|---|---|---|---|---|---|
| 8 | Green Process Design: Circular Economy and Green the Supply Chain | 4, 7 | Lecture Slides and relevant materials listed in Reading and References | In-person | Lecture |
| 9 | Corporate Sustainability Strategy Set up | 1, 6 | Lecture Slides and relevant materials listed in Reading and References | In-person | Lecture |
| 10 | Sustainable Business Module and Financing | 5, 6 | Lecture Slides and relevant materials listed in Reading and References | In-person | Lecture |
| 11 | Singapore Sustainable Development and the Foundation of Sustainability Strategy Setting: EIA and EMS | 5, 6, 7 | Lecture Slides and relevant materials listed in Reading and References | In-person | Lecture |
| 12 | Group Presentation | 1, 2, 3, 4, 5, 6, 7 | Lecture Slides and relevant materials listed in Reading and References | In-person | Lecture |
| 13 | Group Presentation | 1, 2, 3, 4, 5, 6, 7 | Lecture Slides and relevant materials listed in Reading and References | In-person | Lecture |

## Learning and Teaching Approach

| Approach | How does this approach support you in achieving the learning outcomes? |
|---|---|
| Lecture | Formal lectures on topics with in-class discussions |
| Group Presentation | This helps to achieve one or more of the outcomes as they need to do self-study and research as well as promote team works. |

## 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): Assignment(Report Submission) | 1, 2, 3, 5 | a, c, f, g, i, j, k | 20 | | Individual | Analytic | Multistructural |
| 2 | Continuous Assessment (CA): Report/Case study(Group Report to be submitted) | 3, 4, 5, 6 | a, c. f, g, i, j, k | 20 | | Team | Holistic | Multistructural |
| 3 | Continuous Assessment (CA): Assignment(Group Presentation & Slide Submission) | 1. 2, 3, 4, 5, 6, 7 | a, c, f, g, i, j, k | 30 | | Team | Holistic | Multistructural |
| 4 | Continuous Assessment (CA): Test/Quiz(Quiz) | 1, 2, 3, 4, 5, 6, 7 | a, c, f, g, k | 30 | | Individual | Holistic | Relational |

Description of Assessment Components (if applicable)

1. CA1 : Individual written report on ESG/climate risk analysis of selected company's Sustainability Report.

2. CA2: 20% *MF; Group Report Submission on life cycle analysis (LCA) and carbon footprint study of a chosen consumer product.

3. CA3: 30%*MF*GF; Group PowerPoint slide presentation and submission of slides on developing a sustainability strategy with a decarbonization roadmap for a selected company.

Point to note :

1. The teaching faculty will provide more details for all the assignments in class.

2. Details of the assessment for CA1 to CA3 are reflected in Appendix 1 of the Rubrics file attached.

3. All group assessments for this course is also reliant on you working closely as a team to complete the project. Besides, it also aims to train you to review the quality of others' group projects and to encourage active group participation. Hence, Group Rating Factor (GF) and Modification Factor (MF) will be applied to account for both the group and individual contributions to the group project work.

The assessment criteria for MF and GF is reflected in Appendix 2 & 3 respectively of the Rubrics file attached. The GF is derived from group evaluation submission while MF is derived from panel judges' feedback, weekly discussion session and peer assessment.

Formative Feedback

Comment on each group presentation will be given and each group will also submit comment with respect to other groups' presentations to the course instructor by email.

## 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 | Advanced |
| Care for Society | Advanced |
| Collaboration | Advanced |
| Global Perspective | Advanced |
| Transdisciplinarity | Advanced |

## 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
1. take all scheduled assignments and tests by due dates.
2. take responsibility to follow up with course notes, assignments and course related announcements.
3. participate in all group project discussions and activities.

Policy (Absenteeism)

Group work requires each member to contribute to team-work. Valid reasons include falling sick supported by a medical certificate and participation in NTU's approved activities supported by an excuse letter from the relevant bodies. There will be no make-up opportunities for in-class activities.

Policy (Others, if applicable)

Last Updated Date: 23-06-2025 10:53:03

Last Updated By: Yang, En-Hua

## Appendix 1

CA1: Individual Assignment (A report must be submitted)

CA2: Group Report (A Group Report must be submitted)

### Rubrics for CA1 & CA2

| Criteria | Good (80 – 100) | Average (60 – 79) | Fair (40 – 59) | Poor (<40) | Remarks |
|---|---|---|---|---|---|
| Introduction, background and objectives (25%) | | | | | Clear and well-defined description of background and objectives |
| Methodology, analysis & discussion (50%) | | | | | Apply best available or/and innovative approach, in-depth and thorough analysis and discussion of topics |
| Conclusion & recommendation (25%) | | | | | Summarize and highlight key findings, provide clear and workable recommendations |

### Rubrics for CA3

CA 3: Group Assignment (Group Presentation + Submission of Presentation Slides)

| Criteria | Good (80 – 100) | Average (60 – 79) | Fair (40 – 59) | Poor (<40) | Remarks |
|---|---|---|---|---|---|
| Organization and planning (10%) | | | | | Coordination and interaction between members during presentation and Q&A |
| Presentation slides and aids (15%) | | | | | Format and style, grammar & spelling, diagrams/tables/graphs, AV materials etc., make presentation interesting and meaningful |
| Time management (5%) | | | | | Finish within prescribed time with appropriate pacing |
| Introduction, background and objectives (15%) | | | | | Clear and well-defined description of background and objectives |
| Methodology, analysis & discussion (35%) | | | | | Apply best available method and innovative approach, in-depth and thorough analysis and discussion of topics |
| Conclusion & recommendation (20%) | | | | | Summarize and highlight key findings, provide clear and workable recommendations |

## Appendix 2 Criteria for Peer Assessment

| Criteria | Outstanding: 4 | Good: 3 | Average, meet expectation: 2 | Below expectations: 1 |
|---|---|---|---|---|
| *Collaborative behaviour* | Cooperative and always delivered assigned tasks on time. Take initiative to help other to ensure success of team project. | Cooperative and always delivered assigned tasks on time. Willing to assist others upon request. | Stop short at delivering assigned tasks, sometimes after reminder(s). | Uncooperative, non-committed, always miss deadlines. |
| *Quality of works* | Quality of works higher than overall group quality, or go extra miles to assist teammate to enhance the quality of group works. | Good quality of deliverables under individual responsibility. | Acceptable quality of deliverables under individual responsibility. | Quality of works not acceptable. |
| *Ideas & participations* | Active participation and initiatives, good ideas & suggestions in enhancing the quality of group works. | Contributed suggestions and ideas to enhance the quality of group works. | Somewhat contributed in enhancing the quality of group works. | Did not participate in group works. |

| Average Peer Assessment Score | MF |
|---|---|
| ***3.51 to 4.00*** | 1.05* |
| ***3.01 to 3.50*** | 1.00 |
| ***2.51 to 3.00*** | 0.95 |
| ***2.00 – 2.50*** | 0.9 |
| ***Below 2.0*** | Separate Assessment |

Note: * - to cap the max moderated score at 100%

Peer assessment exercise will be anonymous and done towards the end of the semester.

For student who has average peer assessment score below 2.0, Course coordinator might contact/call up the student as well as the other team member(s) to further assess the appropriate MF.

In addition to peer assessment, MF might be moderated by course coordinator and panel judges from the interaction during consultation, feedback from the team members.

## Appendix 3 Assessment Rubric for Group Evaluation

Each group will evaluate the presentation of the rest of the groups and rate them in numerical order with one (1) being the best presentation. For example, if there are 8 groups in total, then each group will rate the rest of the 7 groups from 1 to 7. The group members are encouraged to discuss among themselves first before deciding to rank the rest of the 7 groups. The purpose of this group evaluation is to encourage participation and team-work and review training i.e. training to review the quality of project presentations.

The criteria used to evaluate the group presentation are:

1. Content of the presentation: background and objective, impact analysis and management.
2. Presentation format & Skills: clear and concise presentation; captivating, lively and engaging; smooth delivery within the time allocated as well as the ability to answer questions.

| Average Group Assessment Score | GF |
|---|---|
| ***1*** | **1.050** |
| ***2*** | **1.035** |
| ***3*** | **1.020** |
| ***4*** | **1.005** |
| ***5*** | **0.990** |
| ***6*** | **0.975** |
| ***7*** | **0.960** |
| ***8*** | **0.945** |

*Note: GF will drop by 0.015 (1.5%) with decreasing group rating score.*

Group evaluation assessment exercise will be done after the group presentation and it will be submitted by end of the semester by each group, hence the score will be applied to all members within the group.

In addition to group evaluation assessment, GF might be moderated by course coordinator.