



GLOBAL SUMMER PROGRAMME 2025

MGMT 242 CORPORATE SUSTAINABLE PRODUCT AND SYSTEM DESIGN

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COURSE DESCRIPTION

Companies increasingly seek to be more sustainable, but many firms struggle to operationalize the concepts within their organizations and supply chain, or to translate theoretical concepts into practical value for themselves and their customers. Sustainability practitioners must not only help develop (i.e., design) and sell a sustainable product or service, but an entire mind-set, and where necessary, to devise changes in business models and operations.

The course will guide students, working in teams, through a development process involving market and strategic assessment, positioning of the product (including its sustainability attributes), customer-centric design, and business model innovation. This will in turn lead students to develop value propositions and marketing, which will be presented in a final pitch session to the client (or instructor acting as a client).

The primary methodology will consist of design thinking techniques, which will be broadly used and adapted to the sustainability context. Phases of design include the understanding of candidate consumers' (users') needs by qualitative means, creation of basic product concepts and prototypes, and the testing and validation of prototypes with users. Implications will also be drawn for the client's business model.

LEARNING OBJECTIVES

By the end of this course, students will be able to:

- Describe basic societal concepts and frameworks on sustainability and be able to guide a corporate's sustainability-based product, service and/or system design with these frameworks.
- Conduct a strategic and/or market assessment for a specific product, including the manner of orientation (towards sustainability) of selected consumer markets. This may include conducting qualitative and secondary research on potential customers.
- Identify and solve a problem of how corporations can become more sustainable by innovating to meet consumer needs. Specifically, design a value proposition via design thinking for a selected customer segment, including the devising of a strategy to improve the product's acceptance by the firm's potential customers and its broader market.

PRE-REQUISITES / REQUIREMENTS / MUTUALLY EXCLUSIVE COURSE(S)

This course does not require any pre-requisites.

ASSESSMENT METHODS

Class Participation	20%
Group Project	45%
Peer Evaluation	5%
Individual Final Assignment	30%
Total:	100%

INSTRUCTIONAL METHODS AND EXPECTATIONS

Class Participation

Participation is a central part of the learning process in this class. Your participation mark reflects your contribution to your classmates' learning. This includes attendance, preparation prior to class including reading assigned materials and completion of mini assignments, and active participation in class discussions and group activities in class.

Groupings and Group Size

You are encouraged to find your own group members, based on diversity requirements. Each group of 4-5 members should have a diverse mix of majors, gender and nationality. The group-member list should be submitted to the teaching assistant no later than the second lesson of class. Alternatively, we could also form the groups based on diversity requirements.

Individual Assignment

There will be one individual assignment in this course. The assignment will give students an opportunity to demonstrate their own research and critical thinking capability outside of their group. The assignment will be described in detail in class.

Group Projects and Pitches

The objective of the project is to allow students to apply what they have learnt in class to a client's sustainability challenge. Students will be required to use design thinking framework understand the needs of stakeholders (including customers), ideate solutions to enhance acceptance of sustainable products/services and build prototypes to validate assumptions and gain early feedback. There will be at least 2 project presentations to the client (or instructor acting as client) during this course. Details will be provided during the project kick-off in lesson 2.

CONSULTATIONS

As this is a project-based course with design thinking methodology involved, there will be at least 45-60 minutes allocated for group work during class after lesson 3.

Groups are strongly encouraged to seek consultation from me during our normal class time. Individuals or groups who require consultation outside of class time may schedule separate times with me.

RECOMMENDED TEXT AND READINGS

There is no assigned textbook for this course but there are useful reference books.

Reference books (Available in SMU Library: hardcopies and online version):

- **Iannuzzi, Al. (2012)**; Greener products: the making and marketing of sustainable brands. CRC Press.
- **Kumar, Vijay (2012)**; 101 Design Methods: A Structured Approach for Driving Innovation in Your Organization. Wiley.

Students are expected to complete assigned readings from the lesson plan prior to the relevant class session, to facilitate fruitful class discussion.

UNIVERSITY POLICIES

Academic Integrity

All acts of academic dishonesty (including, but not limited to, plagiarism, cheating, fabrication, facilitation of acts of academic dishonesty by others, unauthorized possession of exam questions, or tampering with the academic work of other students) are serious offences.

All work (whether oral or written) submitted for purposes of assessment must be the student's own work. Penalties for violation of the policy range from zero marks for the component assessment to expulsion, depending on the nature of the offense.

When in doubt, students should consult the instructors of the course. Details on the SMU Code of Academic Integrity may be accessed at <https://smu.sharepoint.com/sites/oasis/SitePages/DOS-WKLSWC/UCSC.aspx>.

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Accessibility

SMU strives to make learning experiences accessible for all. If you anticipate or experience physical or academic barriers due to disability, please let me know immediately. You are also welcome to contact the university's accessibility services team if you have questions or concerns about academic provisions: accessibility@smu.edu.sg. Please be aware that the accessible tables in our seminar room should remain available for students who require them.

LESSON PLAN		
LESSONS	TITLE	TOPICS
LESSON 1	Overview of course; Introduction	<ul style="list-style-type: none"> • Definitions of sustainability, sustainability drivers and trends • Sustainable Development Goals • Why corporations invest in sustainability • Introduction to design thinking and role of design in sustainability
LESSON 2	Sustainability and design; Project Briefing & Kick-off	<ul style="list-style-type: none"> • Frameworks for assessing sustainability • Bringing sustainability into design • Design thinking – Empathy • Introduction to Design Challenge and Target User Segments
LESSON 3	Field Trip	<ul style="list-style-type: none"> • <i>Visit to Singapore Sustainability Gallery (To be confirmed)</i>
LESSON 4	Sustainability & markets	<ul style="list-style-type: none"> • Introduction to Sustainability and Markets • Design thinking – Ideation
LESSON 5	Strategy, design and sustainability	<ul style="list-style-type: none"> • Strategy and Sustainable Design • Design thinking - Prototyping and Validation
LESSON 6	Interim Presentation 1	<ul style="list-style-type: none"> • <i>Initial Empathy/Ideation Presentation</i> • <i>In-class project work and team consultations</i>
LESSON 7	Sustainable Business models	<ul style="list-style-type: none"> • Business models, design and sustainability • <i>In-class project work and team consultations</i>
LESSON 8	Sustainable materials and circular economy	<ul style="list-style-type: none"> • Sustainable material selection • Circular economy, circular carbon economy and circular design • <i>In-class project work and team consultations</i>
LESSON 9	Interim Presentation 2	<ul style="list-style-type: none"> • <i>Initial Prototypes Presentation</i> • <i>In-class project work and team consultations</i> • Individual Assignment Due
LESSON 10	Sustainable metrics and assessments	<ul style="list-style-type: none"> • Environmental impact assessment tools • Social and ethical considerations in design • Economic sustainability metrics • <i>In-class project work and team consultations</i>
LESSON 11	Sustainability reporting and standards	<ul style="list-style-type: none"> • Overview of global sustainability regulations • Eco-labels and certifications • Compliance and reporting • <i>In-class project work and team consultations</i>
LESSON 12	Final Presentation	<ul style="list-style-type: none"> • <i>Final Project Presentation</i> • Peer Evaluation due