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	AY2024-2025
Semester/Trimester/Others (specify approx. Start/End date)	Semester 1
Course Author * Faculty proposing/revising the course	Mr Ng Chong Yuan
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Course Title	Appreciating IP in Research & Development
Course Code	MS6022
Academic Units	3
Contact Hours	39
Research Experience Components	

Course Requisites (if applicable)

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

Course Aims

This course provides you with a working understanding on engineering research and development and intellectual property (IP) in related context. It also trains you to apply and use IP knowledge to address real-life IP-related issues in the R&D context.

Key themes that will be covered are assessing IP issues related to R&D, and the implementation and monitoring of suitable approaches to address these IP issues. Expanding on these, the course explores how an understanding of IP rights protection laws and their considerations can guide and support an organisation's R&D activities and strategies.

Particular emphasis will be placed on the practical and legal issues in relation to managing the R&D value chain of creation/innovation, identification, ownership, protection, and commercial exploitation of intellectual assets. Case studies related to various branches of engineering including materials science engineering, will be presented and discussed.

Course's Intended Learning Outcomes (ILOs)

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

ILO 1	Appraise the objectives and importance of R&D to an organisation
ILO 2	Identify IP issues in relation to the R&D life cycle and context
ILO 3	Assess relevant IP management matters in a given R&D context
ILO 4	Formulate and recommend suitable approaches or relevant IP practices in order to maximize R&D outcomes.
ILO 5	Develop ways to address IP issues arising in R&D life-cycle and R&D management processes.
ILO 6	Explain which stakeholders should be collaborated with in an R&D context

Course Content

Introduction & Importance of R&D (3 hours)

Objectives of R&D (5 hours)

Assessing IP Issues in Relation to R&D: Types of IP Rights, Knowledge Leakages, Trade Secrets, Collaboration Issues, Methods of Commercialization, Infringement Avoidance (12 hours)

Objectives of approaches to address IP issues (5 hours)

Implementing Courses of Action to address IP issues (8 hours)

Assessing IP Issues in Relation to R&D: Monitoring Implementation (3 hours)

Introduction & Importance of R&D (3 hours)

Reading and References (if applicable)

IPA-authored Learner's Guide containing key content (required)

Martin A. Bader, *Intellectual Property Management in R&D Collaborations*, SPRINGER, 2006.

Planned Schedule

Week or Session	Topics or Themes	ILO	Readings	Delivery Mode	Activities
1	Introduction & Importance of R&D	1	Prescribed Learner's Guide reading	In-person	Lecture
2	Objectives of R&D	1	Prescribed Learner's Guide reading	In-person	Lecture; tutorial involving case study analysis
3	Objectives of R&D	1	Prescribed Learner's Guide reading	In-person	Lecture; tutorial involving case study analysis
4	Assessing IP Issues in Relation to R&D : Confidentiality; R&D collaboration; IP Commercialization; Avoiding IP Infringement	2-4	Prescribed Learner's Guide reading	In-person	Lecture; tutorial involving case study analysis
5	Assessing IP Issues in Relation to R&D : Confidentiality; R&D collaboration; IP Commercialization; Avoiding IP Infringement	2-4	Prescribed Learner's Guide reading	In-person	Lecture; tutorial involving case study analysis

Week or Session	Topics or Themes	ILO	Readings	Delivery Mode	Activities
6	Assessing IP Issues in Relation to R&D : Confidentiality; R&D collaboration; IP Commercialization; Avoiding IP Infringement	2-4	Prescribed Learner's Guide reading	In-person	Lecture; tutorial involving case study analysis
7	Objectives of approaches to address IP issues	4-5		In-person	
8	CA1	1-4		In-person	Carried out in lecture session
9	Implement Suitable Approaches and Monitor Implementation	4-5		In-person	
10	Relevant Stakeholders to Liaise with	5-6	Prescribed Learner's Guide reading	In-person	Lecture; tutorial involving case study analysis
11	CA2 Preparation (Group)	2-6	Prescribed Learner's Guide reading	In-person	Lecture
12	CA2 (Group)	2-6		In-person	Carried out in lecture session
13	CA3 Common Test (Individual)	1-6		In-person	Carried out during lecture session

Learning and Teaching Approach

Approach	How does this approach support you in achieving the learning outcomes?
Lecture	You will be presented with overviews and key takeaways in the lecture presentations, using standard presentation formats enhanced with online resources (where applicable) to illustrate explanations.
Tutorial	You will be presented with hypothetical fact patterns that you will work through in a guided manner (modified essay question). You will be required to formulate the responses in a group, and present the same to the whole class, and receive feedback as to the accuracy of responses.
Group assignment	Groups will be given one assignment brief containing 2 main deliverables: a) presentation as a group; b) a written report/memorandum

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): Test/Quiz(Common Test (Duration: 1 hour; closed book; Answer booklet is required.))	1-4		20	Individual	Analytic	Multistructural
2	Continuous Assessment (CA): Presentation(Group Assignment (written response and presentation))	2-6		20	Team	Analytic	Multistructural
3	Continuous Assessment (CA): Test/Quiz(Common Test (Duration: 1.5 hours; closed book; Answer booklet is required.))	1-6		60	Individual	Analytic	Multistructural

Description of Assessment Components (if applicable)

Continuous Assessment (CA) 1:
You will have to complete 1 close book test with a duration of 1 hour. The test will be held during one of the scheduled lecture hours.

Continuous Assessment (CA) 2: Group Assignment
You will have to complete a group assignment which consists of (A) a written response and (B) a presentation. Detailed instructions (including case studies, roles, and (guiding) questions for CA2) will be made available on the course site in due time.

Continuous Assessment (CA) 3:
You will have to complete 1 close book test with a duration of 1.5 hours. The test will be held during one of the scheduled lecture hours.

Formative Feedback

Feedback will be given on a constant basis, in the following contexts:

1. In respect of your responses to hypothetical problem questions attempted during tutorial
2. Review session post CA1 (common test)
3. In respect of your presentation deliverables for CA2 (component of group assignment); feedback will be given post-presentation
4. Review session ahead of final CA, as a class and on an individual basis (voluntary).

NTU Graduate Attributes/Competency Mapping

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

Attributes/Competency	Level
Ethical Reasoning	Intermediate
Self-Management	Intermediate
Transdisciplinarity	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)

You are expected to complete all assigned readings, activities, assignments, attend all classes punctually and complete all scheduled assignments by due dates. You are expected to take responsibility to follow up with assignments and course related announcements. You are expected to participate in all project critiques, class discussions and activities.

Policy (Absenteeism)

In-class activities make up a significant portion of your course grade. Absence from class without a valid reason will affect your participation grade. 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)

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