

MS4661 APPLICATION OF PATENTS & REGISTERED DESIGN IN MATERIALS RELATED INDUSTRY

Academic Year	2023-2024	Semester	2
Course Coordinator	MSE(UG) Academic Office/IPOS International		
Course Type	MPE/BDE		
Pre-requisites	NIL		
AU	3		
Grading	Letter Grading		
Contact Hours	Lectures: 26 hours Tutorials: 13 hours Total 39 hours		
Proposal Date	24 November 2023		

Course Aims

This course follows on from the module Fundamentals of IP to provide deeper knowledge and skills relating to some aspects of patent and registered design having substantial relevance in the engineering industry.

The course provides you with the ability to identify aspects of patent and registered design law, understand how knowledge of patent and registered design law can drive an organization's IP strategies, and assess potential courses of action concerning patentable inventions and design protection. Particular emphasis will be placed on the legal issues in relation to creation, protection, and exploitation of these intellectual assets.

A note on the legal cases that are highlighted in the study units: these cases are for illustrative purposes in relation to the legal principles discussed; in general you are NOT expected to be able to recall them or use them in presenting arguments for assessment purposes.

Intended Learning Outcomes (ILO)

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

- 1) Apply the range of the patent and registered design protection regimes and their related legislation and regulations.
- 2) Determine the qualifying criteria for protection of patent and design rights, and duration of protection under the respective regimes.
- 3) Evaluate patent and registered design protection regime(s) or strategy for IP assets of a business.
- 4) Appraise issues relating to ownership and control of patent and registered design rights.
- 5) Assess potential infringing behaviour/activities, and possible defences against allegations of infringement.
- 6) Appraise appropriate remedies for instances of proven infringement.
- 7) Propose how to steer a business's IP strategies and objectives based on the protection afforded by the patent and registered design protection regime or strategy.

- 8) Assess potential business applications of IP rights/assets relating to patent and registered design.
- 9) Assess different considerations for the making of IP contracts and transactions focusing on patent and registered design.

Course Content

No	Topic	Hours
1.	Development of the Singapore Patent System	3
2.	Patentability Criteria: Novelty, Inventive Step and Industrial Applicability	9
3.	Prior Art and Priority Claims	3
4.	Patent Entitlement and Inventorship	3
5.	Assessing Business Strategies: Patenting	6
6.	Relationship between Patents and Designs: Protection Strategies	3
7.	Development of the Singapore Designs System	3
8.	Design Registration Criteria, Ownership, and Rights	6
9.	Assessing Business Strategies: Registered Designs	3
	Total	39

Assessment (Includes both continuous and summative assessment)

Component	Course LO Tested	Related Programme LO or Graduate Attributes	Weighting	Team/ Individual	Assessment rubrics
1. Continuous Assessment (CA) 1: Common Test (Duration: 1 hour; closed book; Answer booklet is required.)	ILO 1 – 5	EAB SLO f and i	20%	Individual	Appendix 1
2. CA2: Group Assignment (<u>Presentation</u>)	ILO 6 – 9	EAB SLO f and i	20% Team: 15% Individual*: 5%	Team & Individual	Appendix 1
3. Final Examination (Duration: 2 hours; closed book; Answer booklet is required.)	ILO 1 – 9	EAB SLO f	60%	Individual	N.A.
Total			100%		

* Individual components can be assessed through the student's performance during the presentation or other forms of *viva voce* (as needed).

Description of Assessment Components

EAB Graduate Attributes¹	
a)	Engineering Knowledge Apply the knowledge of mathematics, natural science, engineering fundamentals, and an engineering specialisation as specified in WK1 to WK4 respectively to the solution of complex engineering problems.
b)	Problem Analysis Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
c)	Design/Development of Solutions Design solutions for complex engineering problems and design systems, components or processes that meet the specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
d)	Investigation Conduct investigations of complex problems using research-based knowledge (WK8) and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
e)	Modern Tool Usage Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering problems, with an understanding of the limitations.
f)	The Engineer and Society Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solutions to complex engineering problems.
g)	Environment and Sustainability Understand and evaluate the sustainability and impact of professional engineering work in the solution of complex engineering problems in societal and environmental contexts.
h)	Ethics Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
i)	Individual and Team Work Function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary settings.
j)	Communication Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
k)	Project Management and Finance Demonstrate knowledge and understanding of engineering management principles and economic decision-making, and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
l)	Life-long Learning

¹ Reference: [EAB Accreditation Manual](#)

	Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
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Formative Feedback

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

Learning & Teaching Approach

Approach	How does this approach support students 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 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 assignment briefs containing 2 main deliverables: a) presentation as a group; b) a written report/memorandum

Readings & References

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

Course Policy & Student Responsibility

As a student of the course, you are required to abide by both the University Code of Conduct and the Student Code of Conduct. The Codes provide information on the responsibilities of all NTU students, as well as examples of misconduct and details about how students can report suspected misconduct. The university also has the Student Mental Health Policy. The Policy states the University's commitment to providing a supportive environment for the holistic development of students, including the improvement of mental health and well-being.

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. Consult your instructor(s) if you need any clarification about the requirements of academic integrity in the course.

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.

Course Instructors

Instructor	Office Location	Phone	Email
IPOS International	1 Paya Lebar Link #11-03, PLQ 1, Paya Lebar Quarter, Singapore 408533	6330 8660	gradstudies@iposinternational.com

Planned Weekly Schedule

Week	Topic	Course ILO	Readings/Activities
1	Development of the Singapore Patent System; Patentability Criteria: Novelty, Prior Art and Priority Claims	ILO 1 – 2	Prescribed Learner's Guide reading; lecture
2	Patentability Criteria: Inventive Step and Industrial Applicability	ILO 2 – 3	Prescribed Learner's Guide reading; lecture; tutorial involving case study analysis
3	Entitlement to Patents and Inventorship	ILO 4 – 5	Prescribed Learner's Guide reading; lecture; tutorial involving case study analysis
4	Patent Enforcement and Infringement: Announce CA1	ILO 4 – 5	Prescribed Learner's Guide reading; lecture; tutorial involving case study analysis

5	Assessing Business Strategies: Patenting	ILO 5	Prescribed Learner's Guide reading; lecture; tutorial involving case study analysis
6	CA1 Common Test	ILO 1 - 5	Prescribed Learner's Guide reading; lecture; tutorial involving case study analysis
7	Development of the Singapore Registered Designs System	ILO 6 – 7	Prescribed Learner's Guide reading; lecture; tutorial involving case study analysis
8	Design Registration: Criteria, Ownership, and Rights	ILO 6 – 8	Prescribed Learner's Guide reading; lecture; tutorial involving case study analysis
9	Registered Design Enforcement and Infringement; Announce CA2	ILO 6 – 8	Prescribed Learner's Guide reading; lecture; tutorial involving case study analysis
10	Assessing Business Strategies: Registered Designs	ILO 8 – 9	Prescribed Learner's Guide reading; lecture; tutorial involving case study analysis
11	Relationship Between Patents and Designs: Protection Strategies	ILO 6	Prescribed Learner's Guide reading; lecture; tutorial involving case study analysis
12	CA 2 (Group Assignment deliverables)	ILO 6 - 9	Prescribed Learner's Guide reading; lecture; tutorial involving case study analysis
13	Examination review	ILO 1 – 9	Lecture (summary of main topics), tutorial consults on individual basis