TO: The Faculty of the College of Engineering

FROM: Elmore Family School of Electrical and Computer Engineering

RE: New Graduate Course, ECE 50005 Intellectual Property Generation and Management

The faculty of the Elmore Family School of Electrical and Computer Engineering has approved the following new course. This action is now submitted to the Engineering Faculty with a recommendation for approval.

ECE 50005 Intellectual Property Generation and Management
Sem. 1&2, Lecture 3, Cr. 3.
Prerequisite: graduate student standing

Description:
This course will provide students with a comprehensive overview of the generation and management of intellectual property. Topics covered include the definition of a patent, an overview of intellectual property law, filling a patent with the USPTO, and various business aspects of managing and enforcing patents. This course is intended for engineering graduate students as well as upper-level engineering undergraduates. It may also be suitable for some students outside of engineering.

Reason:
This course is intended as a project-track "elective" that can also be taken by students not in the project track. It is now offered online and through Purdue Global.

Course History: Summer 2024 – 58, Fall 2024 – 31, Spring 2025 – 58

Mithuna Thottethodi,
Associate Head for Teaching and Learning
Elmore Family School of Electrical and Computer Engineering

Course Information

- **Course number and title ECE 50005 IP Gen & Mgmt: An Inventor's View**
- **CRN: 32282**
- **Instructional Modality:** Async-Online with recorded guest lectures and office hours. Due to the varied schedules of working students in the class, there will be no fixed office hours. However, students are encouraged to email the instructor to arrange a preferred day and time, including weekends.
- **Course credit hours:** 3 credits
- **Prerequisites:** Must have at least 2 years Undergrad work

Instructor(s) Contact Information

- **Name of the instructor(s):** Santokh Singh Badesha
- **Office Location:** MSEE Building, 150G
- **Purdue Email Address:** sbadesha@purdue.edu
- **TA:** Likhita Sai Nelapudi, lnelapud@purdue.edu

Course Description

This course will provide students with a comprehensive overview of the generation and management of intellectual property.

Lectures will be covered in 4 units:

Unit 1: What is Intellectual Property – Basics, What is a Patent?, What is Trademark?, What is Copyright?, Invention and Innovation, Wallpaper vs. Masterpiece

Unit 2: Where Good Ideas Come From, Documenting Your Idea in an Invention Disclosure, How a Patent is Structured and its Associated Contents, IP Value Creation Process, Risks and Counter Measures, Addressing Inventorship Issues During Collaborations, Team Empowerment Leading to IP Generation and Commercialization

Unit 3: IP Infringement, Enforcing Your Patents for Fun and Profit…The Business Case, Addressing Partner Data Security

Unit 4: Developing Enablers for IP Generation & Commercialization, Developing Enablers While Addressing Barriers for IP Generation Enablers, Contracts and IP, Leveraging IP to Achieve Business Objectives, Joint Development Agreement, Enablers, Barriers and Mitigation Strategies for Industry/University Collaborative Research, Role in Innovation for IP Generation, University/Industry Interaction Model: Nanocollaborative Example

This course is intended for engineering graduate students and upper-level engineering undergraduates.

Learning Resources, Technology & Texts

- **Textbook (Required)**
  1) **BOOK 1 :** Intellectual Property Handbook, free download from WIPO Knowledge Repository https://tind.wipo.int/record/28661?ln=en&v=pdf
  2) **BOOK 2 :** Introduction to Intellectual Property, by David Kline and David Kappos, Open Stax, 2021, free download available from https://openstax.org/.

  NOTE: Reading assignments from "Book 1" and "Book 2" are given in course schedule and Brightspace.

- **Informed Learning resources such as**

    - Reading assignments
    - Lecture Videos
    - Guest Lecturers
- **Software/web resources**
    - Google, reliable websites
- **Hardware requirements**
    - Reliable internet connection
- **Brightspace learning management system:**
    - All course materials, videos, discussions, homeworks and assignments will be accessed in the Brightspace course.

Learning Outcomes

By the end of the course, you will be able to:

1. Explain to non-experts the differences between various Intellectual Property categories and terminologies including Patents, Trademarks, Service Marks, Trade Secrets, Copyrights, and Know-Hows.
2. Secure management approvals for filing your inventions with the United States Patents and Trademark office (USPTO), develop responses to overcome patent examiner's objections, and finally successfully securing Intellectual Property.
3. Explain attributes and application landscape of Intellectual Property Life Cycle for internal offerings, licensing In- and Out opportunities, infringements, and associated risks and rewards.
4. Discuss strategic pathways to execute Non-Disclosure Agreements (NDAs), Confidential Disclosure Agreements (CDAs), and Joint Development Agreements (JDAs) as these relate to work for hire and collaborative research and development.
5. Apply knowledge of critical enablers and barriers to successfully secure intellectual property in your own area of interest at workplace.

Special Guest Lectures

Each week, there will be recorded special lectures delivered by industry leaders. You are required to watch each lecture as per the course schedule. Questions for the guest speakers should be posted on the discussion forum dedicated to special lectures. While instructors will try to contact the speaker for a response, please note that responses are not guaranteed due to their busy schedules.

Details of any additional special lectures in the future will be communicated at the appropriate time.

Assignments

Each week, you will have the opportunity to achieve course learning outcomes through a variety of small assignments that can be completed remotely and uploaded to Brightspace. Please read the feedback that I provide for ways to enhance your learning going forward and consult with me for questions and additional support. These homeworks primarily relate to each week's topics and involves a self-analysis of your understanding and capability to complete the fundamental skills of the class. Please note that while the assignments may be tied to specific lectures, you should also draw upon your prior knowledge to approach each task.

Feedback will be given 1-2 weeks after the assignment is due.

Participation in Discussion Forums

Students need to actively participate (post an original question or contribute to an open question) in discussions relate to lectures and invited guest speakers by asking probing questions. Questions for each lecture should be posted within two weeks, after which the forum will be closed. There will be a greater focus on student interaction and peer engagement, with the instructors providing responses towards the end of the week for each discussion.

Exams

Exams will include a combination of multiple-choice and multi-select questions, and may cover material beyond the lecture videos and notes. You are expected to actively apply knowledge from external sources, additional reading materials, and discussion forums. Use of ChatGPT during exams is prohibited.

Assessments Breakdown

Your achievement of course learning outcomes will be assessed through a combination of individual assignments, team assignments, participation, exams, NAI exam and a final exam spread throughout the academic period. Details on these assignments and exams, including a schedule of due dates and guidelines on discussion participation and evaluation will be posted on the course website.

Assessments	Description	Points
9 Individual Assignments	• Writing assignments will require students to reflect or a general search of additional information. You are expected to submit atleast 1 page of your work for each assignment, more if the prompts demand it.	10/assignment 90
4 Group Assignment	• Enroll themselves in groups of 5 (instructions for this in Assignment 3) • If possible, find peers that are in the same time zone or geographically close • Students will work together on Assignments 3, 5, 10 and 13	10/assignment 40
Participation in discussion forum and invited lectures	• Grading will be done on a weekly basis, meaning you will receive full points for the week if you participate in at least one lecture discussion forum or special lecture discussion forum during that week	50 points
4 Exams 3 Quizzes and one Final Quiz	• Each exam has around 20 to 25 multiple-choice questions • During the available time you will have 60 minutes to complete and submit. Each exam has a timer and will auto-submit at the end of the 60-minutes.	Quizzes 100 points each Final 150
Participation for the National Academy of Inventors Exam	• Post completion of all lectures (week 15), you will need to take an exam for innovation certificate from the National Academy of Inventors and email the TA to earn the 50 points. • Instructions for accessing the exam will be provided before the exam period.	50 points
		Total: 700

Grading Scale

The letter grading scale will be on a A+, A, A-, B+, B, B-, C+, C, C-, etc. The class might be graded on a curve if the instructors decide to do so.

Exams Honors Code

Since the exams will be asynchronous, all students are required to sign an honors code before each exam (this will be done through a quiz on Brightspace), pledging to use only the allowed material and resources.

Absences and Accommodations

Although this is an online course, you should contact me if something arises in your personal life that will impact your ability to complete your online coursework. University regulations concerning absences are updated on the Office of the Dean of Students website.

If you have a death in the family, you (or your representative) should contact the Office of the Dean of Students. That office will then notify your instructors. Check the Grief Absence Policy on Purdue's website.

If you are called up for active duty or mandatory military training, your commanding officer can provide the Dean of Students a copy of your orders. The Dean of Students may then contact your instructors; however, please let me know at the beginning of the semester if you expect to be absent for military duty.

If you need to adjust deadlines for a religious observance, you must let me know a week in advance, minimize the length of your absence, and be flexible in arranging alternative times to complete the assignments you may miss.

Sickness needs documentation from your healthcare provider.

Work-related travel requires documentation from your manager or supervisor.

An **incomplete grade** is only for students who do most of the required work (at least 75%) and at the end of the semester cannot finish the course due to a **well-documented emergency or other circumstances beyond the student's control**.

For all absences related to COVID or other infectious diseases, please see the Protect Purdue website.

Course Schedule

- This will be a separate document and is available in the Brightspace course in the ECE59500 IP Generation and Management: An Inventor's View Course Schedule module.
- Use the Purdue Academic Calendar link to find key University dates for the semester.

Academic Integrity & Copyright

In the Start Here module of the course, Under University Policies and Statements sub-module is a hyperlink called "Purdue's Student Guide for Academic Integrity" that links to the Office of Student Rights and Responsibilities Academic Integrity webpage and a link named "Use of Copyrighted Materials" that links to a University Policy Office webpage.

Academic integrity is one of the highest values that Purdue University holds. Individuals are encouraged to alert university officials to potential breaches of this value by either emailing integrity@purdue.edu or by calling 765-494-8778. While information may be submitted anonymously, the more information is submitted the greater the opportunity for the university to investigate the concern. More details are available on our course Brightspace under University Policies and Statements.

Effective learning environments provide opportunities for students to reflect, explore new ideas, post opinions openly, and have the freedom to change those opinions over time. Students and instructors are the authors of the works they create in the learning environment. As authors, they own the copyright in their works subject only to the university's right to use those works for educational purposes Students may not copy, reproduce, or post to any other outlet (e.g., YouTube, Facebook, or other open media sources or websites) any work in which they are not the sole or joint author or have not obtained the permission of the author(s).

Nondiscrimination Statement

Purdue University is committed to maintaining a community that recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages

each individual to strive to reach his or her potential. In pursuit of its goal of academic excellence, the University seeks to develop and nurture diversity. The University believes that diversity among its many members strengthens the institution, stimulates creativity, promotes the exchange of ideas, and enriches campus life. A hyperlink to Purdue's full *Nondiscrimination Policy Statement* here and is included in the Start Here module of the Brightspace course under University Policies and Statements content.

Accessibility

Ensuring that Purdue students have access to equitable learning experiences is a university-level commitment and is the responsibility of all members of the Purdue community. The Disability Resource Center (DRC) is a key partner in this work and is a resource for students and instructors. You are also encouraged to contact the Disability Resource Center at: drc@purdue.edu or by phone: 765-494-1247 if assistance is needed or you have questions.

You will find a link to the DRC in the Start Here module of the Brightspace course under The Student Support and Resources sub-module.

Mental Health/Wellness Statement

Information on CAPS (listed as Purdue Counseling and Psychological Services) is in the Brightspace Student Services widget. The University Senate (Senate Document 19-18) calls for the university to require a mental health statement on your syllabus. You are also urged to speak to students during the first week of classes about the various resources available to them regarding mental health.

> **If you find yourself beginning to feel some stress, anxiety and/or feeling slightly overwhelmed, try** Therapy Assistance Online (TAO), a new web and app-based mental health resource available courtesy of Purdue Counseling and Psychological Services (CAPS)**.** TAO is available to students, faculty, and staff at any time.
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> **If you need support and information about options and resources**, please contact or see the Office of the Dean of Students. Call 765-494-1747. Hours of operation are M-F, 8 a.m.- 5 p.m.
>
> **If you find yourself struggling to find a healthy balance between academics, social life, stress**, etc., sign up for free one-on-one virtual or in-person sessions with a Purdue Wellness Coach at RecWell. Student coaches can help you navigate through barriers and challenges toward your goals throughout the semester. Sign up is free and can be done on BoilerConnect.

If you're struggling and need mental health services: Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of mental health support, services are available. For help, such individuals should contact Counseling and Psychological Services (CAPS) at 765-494-6995 during and after hours, on weekends and holidays, or by going to the CAPS office on the second floor of the Purdue University Student Health Center (PUSH) during business hours.

Basic Needs Security

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the Dean of Students for support. There is no appointment needed and Student Support Services is available to serve students 8 a.m.-5 p.m. Monday through Friday.
Here are some resources:

- ODOS services and information portal and the Critical Need Fund.
- Student of concern reporting (anyone on campus can submit a report if they are unsure where to go or in what way they can help a student - it does not need to be an emergency).
- The ACE Campus Food Pantry (open to the entire Purdue community)
- The Center for Advocacy, Response & Education (CARE) (open to all Purdue students) "provides support and advocacy for survivors of sexual violence, dating violence, and stalking.

Emergency Preparedness

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor's

control. Relevant changes to this course will be posted onto the course website or can be obtained by contacting the instructors or TAs via email or phone. You are expected to read your @purdue.edu email on a frequent basis.

A link to Purdue's Information on Emergency Preparation and Planning is located on our Brightspace under "University Policies and Statements." This website covers topics such as Severe Weather Guidance, Emergency Plans, and a place to sign up for the Emergency Warning Notification System. I encourage you to download and review the Emergency Preparedness for Classrooms document (**PDF**) or (**Word**).

If you are on campus, please follow Purdue's required Emergency Preparedness Briefing. Please make note of items like:

- The location to where we will proceed after evacuating the building if we hear a fire alarm.
- The location of our Shelter in Place in the event of a tornado warning.
- The location of our Shelter in Place in the event of an active threat such as a shooting.

Related Considerations and Guidelines:

1. Keep your cell phone on to receive a Purdue ALERT text message.
2. Log into a Purdue computer connected to the network to receive any Desktop Popup Alerts.

Disclaimer:

Instructor reserves the right to make changes to the syllabus as necessary. Students will be notified of these changes via Announcements on the Brightspace Course Homepage.