

1. Background & Motivation

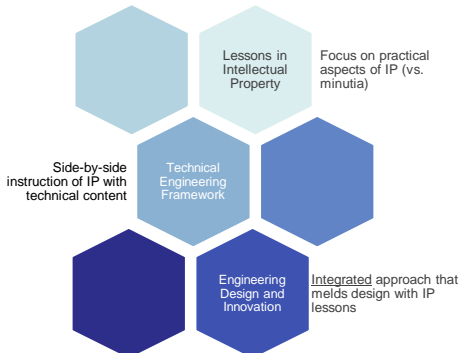
Importance of IP in materials innovation

- Generating intellectual property (IP) is a key value-added activity for engineers at corporations with a major research and development thrust.
- IP, including patents, is especially important in the development of complex materials such as polymers and other soft matter.
- Basic and applied knowledge of IP and patents should be considered an essential practical component in the education of engineers.

Current strategies to teach students about intellectual property

- **Dedicated Lectures in Engineering Courses**
 - One part of a class is dedicated to "learning" about IP
 - **Strengths:** Strong information component
 - **Weaknesses:** Doesn't integrate aspects of IP with engineering, design, or innovation
- **Classes from Business or Law Schools**
 - Students learn from a dedicated course that they take at a professional school
 - **Strengths:** Dedicated course and coursework on IP and broader professional issues
 - **Weaknesses:** Classes often incorporate extraneous information and dilute focus on IP and engineering

Ideal Strategy to Teach Engineering Students Practical Aspects of IP



2. Mechanics of VIPLab

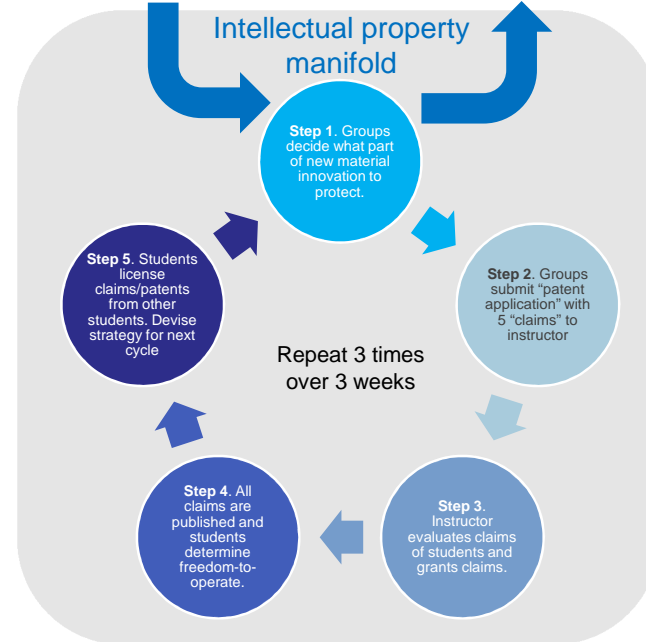
Connecting Invention with IP & Intellectual "Space"



Integrating IP Strategy with Materials Design and Innovation

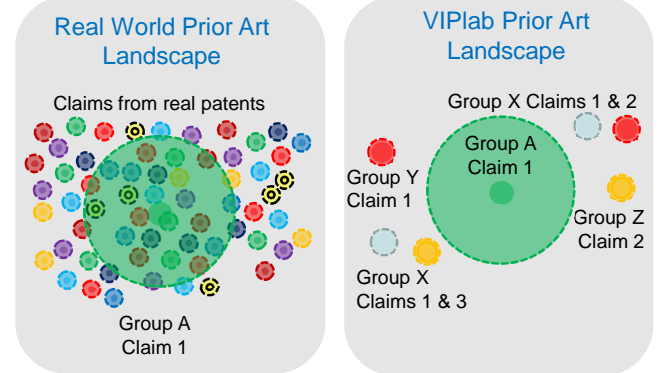
Student groups identify technical problem and design innovative material solution

Students identify technical problem and design innovative material solution

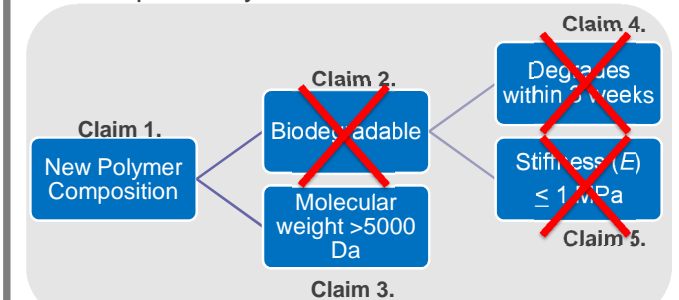


3. VIPLab Teaching Philosophy

Simplify Intellectual Landscape by Creating a Virtual World of Prior Art



Teach Students about Freedom-to-Operate by Structure of Claims Trees



4. Formative Assessment

- Students tend to start off with very conservatively during the initial cycles of the intellectual property manifold
- Students then over-extend themselves on the second cycle in terms of submitting claims that are too broad
- Students tend to find the value in cooperation by the third cycle.
- VIPLab can be applied to any course that has a design component.