

Intellectual Property Rights Commercialization for Engineers and Scientists.

Evaluation report

Patent Course at DTU 2009-2010

Friday, April 9, 2010/JH

Background

The Technical University of Denmark, Copenhagen University and Lund University in a collaborative effort developed and concluded a new course within Intellectual Property Rights (IPR), patenting and commercializing knowledge for PhD students within the technical and natural sciences.

The project was funded by Öresund Entrepreneurship Academy.

The course was designed on the basis of results from a survey of regional stakeholders' demand for field knowledge amongst their researchers and engineers as well as an international search and analysis of existing IP courses at universities compatible with the three partner universities in the Öresund region. Reports: see section 4 – 5.

The course was approved by the DTU PhD Study Board as a 3 ECTS = 75 hours total study effort with 7 three-hour afternoon sessions over three weeks: a total of 21 hours. In a parallel to lectures, groups developed and presented draft commercialization plans for the dissemination of IPR, generated as spin-of from research within biotech, information/communication technology (ICT), cleantech and other). A novelty search training session was included as well.

External teachers from the Danish Patent and Trademark Agency, from Plougmann & Vingtoft A/S, from Novozymes, from the Danish Confederation of Industrialists, from Hegner & Partners, from TTO A/S, from SEED Capital Denmark A/S and from Danish Technological Institute, as well as staff from DTU Dept. of Research and Innovation and from DTU Management provided lecturing. Names of teachers: see annex.

19 students in 6 groups concluded the course, January 2010. Participants evaluated the course after last lecture. Overall satisfaction level is high

As a result, we have a redesigned patent course with course administration transferred from DTU Dept. of Research and Innovation to DTU Management.

Next course is planned January 2011 with modifications according to student evaluation suggestions. Most importantly, the course will be arranged as a one-week full time course to meet demands for higher efficiency and less interference with Ph.D. project work.

Sections

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| 1. Evaluation Analysis | John Heebøl |
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Annex

Teachers

Course samples

Feed back from international benchmark examination.

Section 1.

EVALUATION ANALYSIS

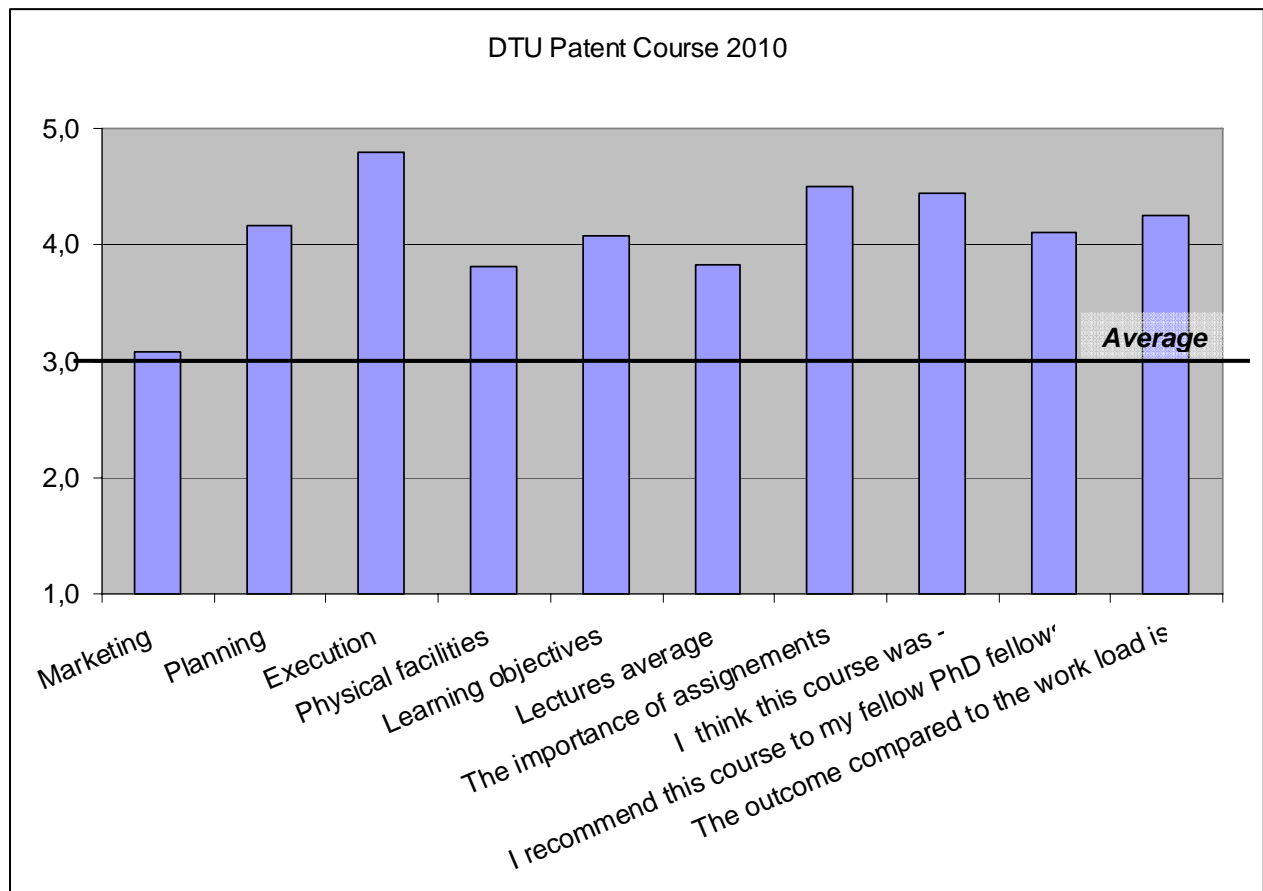
12 out of 19 students answered a post-course questionnaire with following questions:

The Course		1	2	3	4	5
	Marketing					
	Planning					
	Execution					
	Physical facilities					
	Learning objectives					
Lectures						
	1.1 On patents: the legal basis PVS					
	1.2 On patent strategies Hegner & Partners					
	2.1 The structure of Patents PV& Partners					
	2.2 Patents in the uni-business system: AFI-DTU					
	2.3 Patents in an industrial context: Novozymes					
	3.1 Agreements in IP: AFI - DTU					
	3.2 Agreements in IP: CDI (Dansk Industri)					
	3.3 Agreements in spin-outs: DTU Management					
	4. Patent search & FTO analysis: PVS					
	5.1 Tech trans strategies & the license track: TTO					
	6.1 Tech trans: the start-up track DTU Management					
	6.2 Venture capital in TT: SEED Capital Denmark					
	7.1 Tech trans principles in an industry: Novozymes					
	7.2 Tech trans case: AFI-DTU					
	7.3 Tech trans via individual inventors DTI					
Presentations						
	The importance of assignments					
Overall evaluation						
	I think this course was -					
	I recommend this course to my fellow PhD fellows					
	The outcome compared to the work load is					

Evaluation grade

Grade	Value expressions applicable				
1	Very poor	Unacceptable	Very little	Very low	Leave it out
2	Poor	Below expectation	Little	Low	Not important
3	Acceptable	Good enough	Enough	OK	Neutral
4	Good	Better than expected	Much	High	Important
5	Very good	Excellent	Very much	Very High	Very important

Questionnaire



Conclusions

Course average is **4.0**

1. Marketing scores 3.1 which indicates room for improvement. Marketing however is mostly mouth-to-ear, and since this course was an experimental first run, there is reason to believe that more students will hear about it and sign up, 2011 fw.
2. Planning scores 4.2. Execution scores 4.8, indicating a high level of approval of the course administration.
3. Physical facilities - with a score of 3.8 - are appreciated. However some disturbance occurred regularly due to adjacent floor football equipment being energetically used by other students during their frequent breaks.
4. Learning objectives – with a score of 4.1 – are accepted as relevant and met.
5. The lecture evaluation average is 3.8. All lectures received 2.8 or above, indicating a general appreciation and satisfaction. One outstanding lecture delivered by Jon Wullf and Christian Smock, Tech Trans A/S, received max. points. 5.0 from all 12 evaluators without a single deviation.
6. Assignments at this course were an analysis of a specific invention (novelty, freedom to operate, commercialization tracks) and a novelty search session. The importance of these received a score of 4.5.
7. The course quality received 4.4 points which is a cadeau to lecturers and admin.

8. Endorsement to fellow students received 4.1 points indicating that the word will spread in Ph.D. student communities.
9. The outcome compared to the workload received 4.3 points, indicating that one of the targets: a cost-efficient course - was achieved.

Altogether, the course scored acceptable to good on all questions.

Lessons learned and suggested improvements

Student feed back comments combined with questionnaire results suggest:

1. Novelty search: hand out specific assignments (inventions) for the novelty search training session to allow results to be compared and commented
2. Arrange the course as a 1 – 1½ week concentrated full time course. PhD project work is highly disturbed by intermittent lectures over a 3 week period. (One statement however pointed in the opposite direction, so apparently there is no full agreement on this issue).
3. Avoid overlap between themes at different lectures.
4. A little too broad in coverage. Some themes were only superficially covered.
5. Remake structure, based on first course test run
6. Write a textbook on practical IP handling for researchers and scientists.
7. More and better examples – we missed good DTU cases
8. More precise objectives and assignments
9. Develop a case collection that students can pick from for their assignments.
10. Less theory, more examples
11. More focus on patents
12. A little too compressed course
13. Invite a successful inventor/researcher to hear her/his tale.
14. Discuss assignments/results in the forum

To summon up:

1. The course should be compressed to cover 1-1½ week full time.
2. Assignments should be developed for novelty search and freedom-to-operate analysis.
3. University IP commercialization cases should be developed
4. A text book should be compiled.
5. Lectures should be checked for overlap and coherence
6. Slightly more focus on patents

Section 2

COURSE MANUAL

Task instruction to the course designers

Provide a cost efficient, practical course in commercialization of IPR to science- and engineering students. Test the course at DTU at Ph.D. level, winter 2009-2010

Headline: "All you need to know about patents and commercialization of research results and inventions."

Support & financing:

Öresund Entrepreneurship Academy, thank you!

Frame

3 ECTS = 75 hours total study effort.

7 three-hour afternoon sessions over three weeks: a total of 21 hours.

Last session: group presentations.

Assignment

Groups: Develop and present a draft commercialization plan for exploitation of IPR generated during research (within biotech, information/communication technology (ICT), cleantech and other). See details below. Individuals: Make a novelty search, comment on cases handed out at first lecture.

Course rationale

It is a revolving statement that engineers and scientists need more knowledge of business issues to be effective, even in technical jobs.

It is further widely assumed that engineers and scientist often loose business opportunities due to lack of skills in recognizing and commercializing IPR.

It is a proven fact that engineers and scientists without basic skills in commercialization of IPR can be difficult to involve in a smooth and efficient commercialization process.

The proposed course on commercialization of IPR aims at providing the competencies and skills needed for engineers and scientists to:

1. Identify commercial opportunities emerging from R&D
2. Draft the IPR map (novelty, infringement, usefulness etc.)
3. Prepare draft commercialization proposals
4. Work efficiently with specialists within patenting, research & development, business development and financing in a collaborative effort to commercialize new technologies and inventions.

Learning objectives

By the end of this course, students will...

1. Understand the main categories of IPR (Patent, Copyright, Trademark and Trade Secrets)
2. Know how to conduct an initial novelty screening
3. Know the basics of drafting a patent application
4. Know how to develop appropriate demand-driven commercialization strategies and/or business models
5. Know how to draft a commercialization plan or a business plan
6. Know how to work efficiently with tech trans officers and other IPR professionals

Pedagogies & didactics

Lectures in a parallel with group work.

The course is based on guest lecturer comprising industry and university practioners.

Training:

1. Group work on a commercialization plan for university- or industry-owned IPR
2. Individual assignments:
 - a. Novelty search
 - b. Drafting a patent commercialization strategy for a given task (case)

Themes

1. Intellectual property law
 - a. Trademarks, design & copyrights
 - b. Patents:
 - i. Conventions and treaties
 - ii. Requirements (novelty, invention, usefulness)
 - iii. Structure (prior art, specific description, claims, abstract, drawings etc.)
 - c. Ownership: university vs. industry vs. individual inventor
2. Patents
 - a. Novelty search
 - b. Infringement
 - c. Relations between patents
 - d. Quality measures in patents
3. Commercialization strategies
 - a. Licensing or spin-out companies
 - b. The basic licensing model
 - i. University licensing models
 - ii. Industry licensing models
 - c. The basic spin-out model
 - i. From idea to business model and start-up strategy
 - ii. Business planning
 - iii. Financing

4. Agreements relevant for technology transfer and commercialization
 - a. The MTA (Material Transfer Agreement)
 - b. The NDA (Non Disclosure Agreement)
 - c. The license agreement
 - d. The financing agreement (between founders and investors)
 - e. The shareholders' agreement

5. Additional topics:
 - a. Opportunity-driven creativity
 - b. From idea to business model/commercialization strategy
 - c. Recognizing opportunities & risks
 - d. Risk management & -analysis tools
 - e. Stakeholders in a commercialization project and their roles & responsibilities.
 - f. IPR management & organization at universities and within industry
 - g. Intro to DTU's Technology Transfer Office

6. Cases
 - a. University – Biotech
 - b. University – ICT
 - c. University – Cleantech
 - d. Industry – Biotech
 - e. Industry – ICT
 - f. Industry – Cleantech

Assignments

Each group will present a commercialization draft plan, comprising:

1. A description of the invention
2. A description of the demand for the invention, customer profiles and market analysis – one market (if several options)
3. A description of IPR – legal issues
4. A description of IPR – novelty search
5. A description of IPR – patent claims
6. A commercialization strategy
7. A license agreement if applicable
8. A description of the start-up strategy if applicable
9. A description of any financial issues if applicable

Course materials and hand-outs are uploaded to the course web site at www.entrepreneur.dk.

Section 3.

COURSE PLAN

1. IPR: Legal basics

Tuesday 12 January 2010, 01:00 – 04:00 pm

- | | |
|--------------------------------------------------|------------------------------|
| a) A general introduction to IPR. | Anne K.S. Jensen (PVS) et al |
| b) What is a patent | Anette Hegner (H&P) et al. |
| c) Requirements for obtaining a patent | do + do |
| d) International patent treaties | do + do |
| e) Impact of differences in national patent laws | do + do |
| f) Infringement (executing patent rights) | do + do |
| g) Patent strategies | do + do |

2. IPR: patents

Wednesday 13 January 2010, 01:00 – 04:00 pm

- | | |
|----------------------------------------|--------------------------------|
| a) The structure of a patent | Erik Sigh, PV&P3X30 min. |
| b) Patents in the business system of - | |
| - a university | AFI, DTU 30 min |
| - a company | Novozymes 30 min |
| - a spin-out/start-up company | John Heebøll, DTU Man. 30 min. |

3. Agreements in technology transfer and commercialization

Thursday 14 January 2010, 01:00 – 04:00 pm

- | | |
|-----------------------------------------------------|-----------------------|
| a) IPR ownership in general (uni, company, private) | AFI, DTU |
| b) The rights of ownership to a patent | do + Kunal Singla, DI |
| c) Non-Disclosure Agreements | do + Kunal Singla, DI |
| d) Material Transfer Agreements | do + Kunal Singla, DI |
| e) Joint venture Agreements | do + Kunal Singla, DI |
| f) License Agreements | do + Kunal Singla, DI |
| g) Agreements in spin-out companies | John Heebøll, DTU Man |

4. Novelty search & patent reading day

Tuesday 19 January 2010, 01:00 – 04:00 pm

Introduction to novelty search Anne K.S. Jensen, Tone Kaaber Harrit, (PVS)

5. Commercializing IPR: the license track

Wednesday 20 January 2010, 01:00 – 04:00 pm

- | | |
|---------------------------------------------------|-----------------------|
| a) Commercialization strategies | Jon Wulff, TTO & |
| b) Licensing versus start-up | Christian Schmock TTO |
| c) Identifying the stakeholders | |
| d) Disclosing the invention | do |
| e) Identifying the field | do |
| f) Pricing of IPR | do |
| g) Closing the deal | do |
| h) Managing and maintaining the license agreement | do |

6. Commercializing IPR: the start-up track

Thursday 21 January 2010, 01:00 – 04:00 pm

- | | |
|-------------------------------------------------|------------------------|
| a) Basics of starting a knowledge based company | John Heebøll, DTU Man. |
| b) Strategies in business start-up | do |
| c) Basics of business planning | do |
| d) Basics of financing high growth ventures | Peter Tøttrup, SCD |

7. Cases

Tuesday 26 January 2010, 01:00 – 04:00 pm

- | | | | |
|-------------------------------------------------------|-------------|--------------------------------------|---------|
| a) University | – Biotech | AFI, DTU | 30 min. |
| b) University | – ICT | AFI, DTU | 30 min. |
| c) University | – Cleantech | AFI, DTU (?) | 30 min. |
| d) How to's, do's and don'ts in practical licensing.* | | Preben Rasmussen, Novozymes | 30 min. |
| e) Support to private inventors | | Rasmus Offersen Teknologisk Institut | 30 min. |

* A generic presentation of the practical processing of IPR, assessment of value and commercial perspectives etc. in a big biotech company

8. Group presentations

Wednesday 27 January 2010, 01:00 – 04:00 pm

Groups identify an invention at course start-up time to draft a commercialization proposal

Inventions come from own PhD projects, from the university portfolio of successfully commercialized inventions, from university inventions in the pipeline, or fictions made up for the occasion.

Groups will have access to coaching throughout the 2 week course period.

All participants will do a novelty search.

Section 4.

QUESTIONNAIRE ANALYSIS REPORT

Methodology

A questionnaire designed to help defining the learning objectives was sent to stakeholders in the Southern Øresund Region.

Questions were formed as statements. Respondents indicated their level of agreement.

Answers were quantified between -2 and 2. Means and dispersions were calculated. An algorithm transformed means and standard deviations into text.

Internal group agreement was classified according to SD of quantified answers

Outcome options:

- | | |
|-------------------------------|------------------------------------------------------|
| 1. Group strongly agrees: | Mean > 1,5 |
| 2. Group very much agrees | 0,5 < Mean < 1,5 |
| 3. Group agrees | -0,5 < Mean < 0,5 |
| 4. Group disagrees | -1,5 < Mean < -0,5 |
| 5. Group very much disagrees | Mean < -1,5 |
| 6. Internal agreement low: | normalized SD of quantified answers $\geq 0,66$ |
| 7. Internal agreement medium: | $0,33 < \text{normalized SD of quant. answ.} < 0,66$ |
| 8. Internal agreement high: | $0 < \text{normalized SD of quant. answ} < 0,33$ |

Feed back

Following responded:

Technical University of Denmark (AFI)	Lund University (Tech trans dept)
Danish Association of Industrialists (DI)	Hegner & Partners (patent attorneys)
Patent & Varemærkestyrelsen (DK)	Novozymes A/S
Awapatent (patent attorneys)	Danish Technological Institute (DTI)

Conclusions

Respondents find that most importantly, scientists and researchers should be able to work efficiently with technology transfer professionals.

This requires a general insight in the world of commercializing IP, including legal knowledge, basic skills in novelty search, in drafting a patent, and in most important agreements between parties involved

Respondents find that scientists and researchers should generate commercializable knowledge and inventions by inclination and also – though a bit more reluctantly - develop entrepreneurial mindset and skill sets furthering the formation of spin-out companies.

These viewpoints have been included in drafting an experimental cost efficient course for PhD students at DTU, Copenhagen University and Lund University on the commercialisation of IP.

Results

(Cohorde = 10) ICA = IPR Course Alumney = a future scientist/researcher

Agreement: Red = strongly disagree. Dark green = strongly agree

Q.	Text	Agree/Disagree
1-a	An ICA should be able to do a comprehensive novelty search him/herself. Group disagrees Internal agreement medium	
1-b	An ICA should be able to do develop an overview of the specific patent situation through a screening novelty search him/herself. Group very much agrees Internal agreement medium	
2-a	An ICA should be able to write a complete and efficient patent him/herself Group strongly disagrees Internal agreement high	
2-b	An ICA should be able to write a draft patent application him/herself Group agrees Internal agreement low	
3-a	An ICA should be able to file and process a patent application him/herself Group strongly disagrees Internal agreement high	
3-b	An ICA should know the essentials of filing and processing patent applications Group very much agrees Internal agreement medium	
4	An ICA should be able to work efficiently together with a patent attorney Group strongly agrees Internal agreement medium	
5	An ICA should possess a comprehensive insight in international patent law and patent treatises Group disagrees Internal agreement medium	
6	An ICA should be able to identify patentability as inventions emerge during a scientific project Group very much agrees Internal agreement medium	
7	An ICA should be able to commercialise IPR through licensing by himself/herself Group disagrees Internal agreement medium	
8	An ICA should know about IPR licensing at a level that allows him/her to work effectively with tech trans professionals Group strongly agrees Internal agreement high	
9	An ICA should know the essentials of disagreements and infringements within patents Group agrees Internal agreement medium	
10	An ICA should know the essentials of copyright and related IPR related to scientific publication Group very much agrees Internal agreement medium	
11	An ICA should know the essentials of IPR law for of universities and industries Group very much agrees Internal agreement medium	
13	An ICA should know the essentials of Material Transfer Agreements (MTA) in collaborative research projects Group very much agrees Internal agreement medium	
14	An ICA should know the essentials of Non disclosure agreements (NDA) Group strongly agrees Internal agreement medium	
15	An ICA should have an entrepreneurial skillset that allows him/her commercialising IPR through a spin-out company Group agrees Internal agreement low	
16	An ICA should have the e'ship mindset needed to commercialise IPR through the formation of a spin-out company Group agrees Internal agreement medium	
17	An ICA should by his or her own inclination, generate knowledge and technologies with a commercial perspective Group very much agrees Internal agreement medium	

Section 5

International Best Demonstrated Practices – Research results

Background

A survey of regional stakeholders' views on the objectives and contents of such a course has been produced which is supported by an international search and analysis of existing IP courses at universities compatible with the three partner universities in the Öresund region.

This section summarises the best international teaching initiatives found – and suggests impact on the DTU-KU-LU IP course.

Summary

- Unsurprisingly, the best initiatives addressing IPR education for non-lawyers appear to be those which are led by engineering / scientific schools and departments (in cooperation with their law school colleagues)
- A common feedback from business leaders who manage engineers and scientist in companies with important IPR issues is that young graduates often lack an understanding of the strategic and business impact of those issues beyond 'pure science'
- Another common feedback is that young graduates need to better understand the main roles involved in IPR cases - from the patent lawyer to the R&D manager - and that they should be able to empathise with their respective business goals and objectives
- When asking students to draft patent applications, it's important to have them focus on content , not form, since it is not the objective to have them become patent agents.
- The most successful courses all include some form of case studies or even fellowships involving real-life cases relevant to the university or business community
- American professors were most keen and willing to share...

ANNEX

1. Teachers at 42799 DTU Patent Course 2010:

We were very much encouraged by a profound willingness to contribute to this course through lectures and information from following:

Andreas Tycho
Anette Hegner
Hegner & Partners

Anne K. S. Jensen
Tone Kaaber Harrit
Birgitte Bruun Therp
Patent- og Varemærkestyrelsen

Rasmus B. Offersen
Idé & Vækst
Teknologisk Institut

Peter Tøttrup
SEED Capital Denmark

Preben Rasmussen
Novozymes A/S

Kasper Kläning
Louisa Greve Finkelstein
Tonni O. Nielsen
Søren M. Hansen
DTU, Afdelingen for Forskning og Innovation

Kunal Singla
Dansk Industri

Jon Wulff Petersen
Christian Schmock
TTO A/S

Erik Sigh
Plougmann & Vingtoft a/s

John Heebøll
DTU Management

2. INTERNATIONAL SURVEY

Methodology and overview of contacts

University	Contact	Links	Outcome
University of Washington	Prof. Yongim Kim Oxford Intellectual Property Research Center	http://www.law.washington.edu/CourseCatalog/CourseList.aspx?YR=2009&TOPI C=INTPROP	(+) Useful material received about Program of Technology Commercialization, two course content descriptions
Oxford University	Professor Graeme Dinwoodie -	http://www.oiprc.ox.ac.uk/contacts.html	(+) Gave me Prof. Piatt contact at Chicago-Kent
Chicago-Kent College of Law	Prof. Mickie Piatt introduced by Prof. Dinwoodie (Oxford)	http://www.kentlaw.edu/depts/ipp/ipclinic.html	(+) Informative phone conversation. Course description, IP clinic and new Master Program under development. Potential guest lecturer.
Stanford University of Texas Business School	Mark A. Lemley - Professor of Law, Stanford Law School john.allison@mcombs.utexas.edu contact from Prof. Lemley (Stanford)		(+) Sent course syllabus and contact to Univ. of Texas Business School (-) No response so far. Requires follow up.
Gothenburg - Chalmers	Ulf.Petrusson@cip.chalmers.se (?) anneli.hildenborg@cip.chalmers.se	http://www.icm.cip.chalmers.se/about-us/contact-icm	(-) No response so far. Requires follow up.
University of Amsterdam	Prof. Hugenholtz	http://www.ivir.nl/courses/icl/icl.html http://www.law.ed.ac.uk/ahrc/index.aspx	(-) No response so far. Requires follow up.
University of Edingburgh	? Visiting prof. Paul Cole + ecieciur@bournemouth.ac.uk		(-) Further research required
Bournemouth University	CCIPM Co-ordinator	http://www.cippm.org.uk/ http://portal.mytum.de/studium/studien gaenge_en/llmip_m aster	(-) No response so far. Requires follow up.
TU Munchen	?	http://www.law.gwu.edu/Academics/curriculum/Pages/IP.aspx	(-) Further research required
Imperial College George Washington University			(-) Don't teach IPR (-) Further research required
Cambridge University	IA – Dr Isabella Alexander; LB – Professor Lionel Bently; JD – Dr Jennifer Davis	http://www.civil.law.cam.ac.uk/	(-) Don't teach IPR to non-law students (+) Potential guest lecturer. Useful input - will contact 3 universities, University of Toronto, McMaster University in Hamilton, and University of Waterloo, which all have very active, and successful, tech transfer offices
Camilla Nielsen (CNI Consult)	camilla.nielsen@cniconsult.com	http://www.cniconsult.com/profile.html	
Susanne Høiberg, Høiberg Consulting	shg@hoiberg.com	http://www.hoiberg.com/	(+) Potential guest lecturer.

3. CASE: Technical University of Munich

MARKEN | PATENTE | DESIGN | GEBRAUCHSMUSTER | ARBEITNEHMEREERFINDUNGEN

Lehrbeauftragter:

Die Vorlesung wird von Herrn Patentanwalt Glyndwr Charles aus der Patent- und Rechtsanwaltskanzlei Reinhard, Skuhra, Weise & Partner (www.isarpatent.com) gehalten.



Nach Abschluss seines Elektrotechnikstudiums an der Technischen Universität München (TUM) und eines Aufbaustudiums zum Wirtschaftsingenieur ist Herr Charles bereits seit 1999 als deutscher und europäischer Patentanwalt zugelassen und als Sozium bei der Patent- und Rechtsanwaltskanzlei Reinhard, Skuhra, Weise & Partner GbR in München-Schwabing tätig.

Herr Charles betreut vor allem Erfindungen in den Bereichen der Elektrotechnik, der Informatik, der Automatisierungstechnik, der Regelungs- und Mikroprozessortechnik, der Bioinformatik, der Halbleitertechnik, der Digitaltechnik, der Nachrichtentechnik, der Datenverarbeitungstechnik, der Internettechnologie sowie Softwareerfindungen.

Weitere Vortragende:



Oliver Hassa
Diplomingenieur, Patentanwalt



Dr. Tobias Kleimann
Diplomphysiker, Patentanwalt



Vera Dalicheu
Rechtsanwältin



Dipl.-Kfm. Stephen Hundertmark
IP- und Innovationsmanagement



Themen der Vorlesungen

1. Termin:
Einführung in den gewerblichen Rechtsschutz, insbesondere in das Patent- und Gebrauchsmusterrecht
2. Termin:
Patentierung von Software
Arbeitnehmererfindergesetz und Hochschul-erfindungen
Designschutz durch Geschmacksmuster
Gebrauchsmusterschutz
3. Termin:
Kennzeichenschutz
Markenschutz und Unternehmenskennzeichen
Internetrecht, insbesondere Domainnamen
4. Termin:
Durchsetzung von gewerblichen Schutzrechten am Beispiel von Marken und Patenten
5. Termin:
Bewertung, Verwertung und betriebswirtschaftlicher Nutzen von Patenten

Reinhard Skuhra Weise & Partner GbR in Zusammenarbeit mit der Technischen Universität München



Schutz von geistigem Eigentum

Vorlesung im Wintersemester 2008



(Wahlpflichtschein: 3 ECTS-Punkte)

Lehrstuhl für Wirtschaftsinformatik

4. Biotech Tech Trans at University of Washington, Seattle

PTC

Program on Technology Commercialization



PROGRAM ON TECHNOLOGY COMMERCIALIZATION

Instructors:

Yongmin Kim, Professor of Bioengineering and Electrical Engineering
Buddy Ratner, Professor of Bioengineering and Chemical Engineering
Scot Land, Executive Director, Program on Technology Commercialization
Paul Budak, VP Engineering, Confirma Inc.

Primary goal:

- Produce the best educated students well trained not only in their disciplines, but also in commercializing technologies and how to move technologies to market

Additional goals:

- Make UW technologies more accessible to investors and licensees
- Help faculty and students in conducting their research and developing realistic expectations
- Create a closer relationship between the local community of experienced practitioners and UW and its faculty



[Student comments from past PTC programs](#)

[Our instructors have done it before!](#)

[Students gave our instructors A+](#)

Program in Technology Commercialization

Prof. Yongim Kim , Bioengineering and Electrical Engineering, University of Washington

Class	Topic
Class 1 Thursday 9.28	Introduction <ul style="list-style-type: none">• Philosophy of PTC• Goals and expectations• Instructor profiles• Class content and structure• Requirements of course• What is technology commercialization? Experiences in technology commercialization <ul style="list-style-type: none">• PTC 2006 Summer Fellows• Neosonus• Regiseed• Clarion Vision presentation
Class 2 Tuesday 10.03	Opportunity and Risk Recognition <ul style="list-style-type: none">• Identifying and assessing opportunities• Management of risk• Analysis tools Technology Entrepreneurship Case Studies #1: Sierra Geophysical, Tegic, Telesym
Class 3 Thursday 10.05	Introduction to Market Research/Needs Analysis <ul style="list-style-type: none">• Customer analysis• Market analysis• Competitive analysis• Researching techniques and sources• Due diligence research Technology Entrepreneurship Case Study #2: Invision Technologies

<p>Class 4 Tuesday 10.10</p>	<p>Intellectual Property</p> <ul style="list-style-type: none"> • Definition of IP • Creation • Identification • Prosecution • Protection • Licensing intellectual property • Hiring a patent attorney
<p>Class 5 Thursday 10.12</p>	<p>Technology Entrepreneurship</p> <ul style="list-style-type: none"> • Idea in the lab • Market research • Influencer behavior • IP • Development • Partners • FDA • Launch • Growth
<p>Class 6 Tuesday 10.17</p>	<p>Product Design and Analysis</p> <ul style="list-style-type: none"> • Idea • Design • Proof of concept • Prototype • Regulatory approval • Customer feedback analysis • Strategy • Product Dev. Process introduction • “Pitching” the idea
<p>Class 7 Thursday 10.19</p>	<p>Marketing/Sales/Distribution</p> <ul style="list-style-type: none"> • Product • Price • Place (distribution) • Promotion • Branding • Sales • Technical support <p>Technology Entrepreneurship Case study #3:</p>
<p>Class 8 Tuesday 10.24</p>	<p>Project #1: Student Presentations & Discussion</p>

<p>Class 9 Thursday 10.26</p>	<p>Strategic Planning</p> <ul style="list-style-type: none"> • Mission • SWOT • Stakeholder analysis • Goals • Objectives and • Action plan <p>Business Plans for Technology-Based Companies</p> <ul style="list-style-type: none"> • Purpose of the business plan • Elements of the business plan • Presenting the plan – selling
<p>Class 10 Tuesday 10.31</p>	<p>Company Organization</p> <ul style="list-style-type: none"> • Formation/structure • Taxes and tax planning • Equity - sharing the pie • Structure and function of a company
<p>Class 11 Thursday 11.02</p>	<p>Contracts and Negotiation</p> <ul style="list-style-type: none"> • Contracts • Different kinds of agreements • How they are used • Scope of negotiating (personal, business)
<p>Class 12 Tuesday 11.07</p>	<p>Project Management</p> <ul style="list-style-type: none"> • Methodology • Project planning • Project monitoring • Interpersonal management • Role of project management at the start up
<p>Class 13 Thursday 11.09</p>	<p>Technology Entrepreneurship - Case study #4</p> <ul style="list-style-type: none"> • Idea in the lab • Market research • Influencer behavior • IP • Development • Partners • FDA • Launch • Growth
<p>Class 14 Tuesday 11.14</p>	<p>Project #2 Due/presentation of results</p>

<p>Class 15 Thursday 11.16</p>	<p>Introduction to Operating Plans</p> <ul style="list-style-type: none"> • Finance & Accounting basics • Understanding financial statements • Balance sheet • Income statement • Cash flow statement • Strategy and tactics • Building the pro forma <p>Costs analysis</p> <ul style="list-style-type: none"> • Startup versus large enterprise • Fixed versus variable • R&D vs. manufacturing
<p>Class 16 Tuesday 11.21</p>	<p>Technology Entrepreneurship – Case Study #5</p> <ul style="list-style-type: none"> • Idea in the lab • Market research • Infleuncer behavior • IP • Development • Partners • FDA • Launch • Growth <p>Funding/Financing — External Funding Sources</p> <ul style="list-style-type: none"> • Types of financing • Time value of money • Sources of Capital • Bootstrapping and Self-financed growth • Venture Capital • Exit strategies
<p>Class 17 Tuesday 11.28</p>	<p>Regulatory Issues</p> <ul style="list-style-type: none"> • Focus on FDA Process • Influences on product development • US versus foreign countries

<p>Class 18 Thursday 11.30</p>	<p>Technology Transfer</p> <ul style="list-style-type: none"> • Disclosures • IP • Current environment • Economics with Universities • Translations research <p>Case Study #6</p> <ul style="list-style-type: none"> • Advanced Electroluminescence
<p>Class 19 Tuesday 12.05</p>	<p>Business Ethics</p> <ul style="list-style-type: none"> • Defining and quantifying ethics • Importance in business <p>Practical Skills</p> <ul style="list-style-type: none"> • Hiring and working with professionals • Obtaining facilities • Make versus buy decisions • SWOT Analysis • Running a productive meeting • Time management
<p>Class 20 Thursday 12.07</p>	<p>Final and course evaluation</p>