Syllabus

CTEC 1: Discovery to Business Model

Rutgers University
MBA 22 620 685/686
MSE 16 650 606/692
Fall, 2015

Your teaching team:

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CTEC 1: Discovery to Business Model

Syllabus
Classroom: BRR – 4073
(100 Rockafeller Rd, Livingston Campus)

Our Goal is to develop the next generation of entrepreneurs, while building high growth, technology-based companies for the future.

We believe this can only be done through a hands-on, real world, apprenticeship experience.

Course Objectives

Provide a healthy and safe environment for students to engage in an experiential learning opportunity where they will develop the knowledge and skills to:

- Translate scientific descriptions into product concepts
- Identify, articulate and evaluate opportunities in market terms
- Perform primary and secondary market research
- Develop and optimize viable business models

CETEC 1 is the first course in a two course sequence. During this semester, students will learn a structured process to evaluate technologies for commercial viability. It introduces our approach to technology commercialization, called "the algorithm." The algorithm was originally designed to move technologies from the laboratory to the marketplace, but it increasingly demonstrates broader usefulness in the discovery and exploitation of entrepreneurial opportunities. The second course in the CTEC sequence, uses the information and evaluation undertaken in CTEC 1 to prepare business plans for commercialization. Throughout both courses we maintain a consistent pedagogical focus: the best way to learn entrepreneurship is to engage in entrepreneurship. The overarching commitment of the course is therefore to identify and exploit real entrepreneurial opportunities, primarily through the mechanism of creating new businesses. We encourage student participation in start-up businesses in a manner that is appropriate for both the student and the business.

Student Responsibilities

Students participate in the course as an educational exercise. As a participant in the course, however, you agree to certain responsibilities to your teammates and the owners of the intellectual property (IP) that is made available to you. You must allocate enough time to complete tasks assigned to you as a member of a team in a timely manner and to the best of your abilities. You must agree to keep all unpublished information about any IP in the course confidential.

We do not take ownership of the technologies provided for course use. All information, reports and analyses pertaining to the technologies made available, become the property of the owner of the IP and must also be kept confidential. The only exception to this obligation comes when a full business plan for a startup is prepared and becomes the basis for a startup company that is moving toward launch; under these circumstances, the business plan and related material become the property of the newly formed company.

Students will be required to sign a form agreeing to abide by these conditions as a requirement to continue in this course.

Course Structure

The course is intended to be useful to scientists and engineers who may follow career paths that evolve from pure R&D toward more direct commercial activities, and for business students and professionals who will be working in technology-intensive industries. It is useful for anyone wishing to engage in for-profit entrepreneurship.

The course consists of class meetings and team meetings. The class meets on Wednesdays from 6:40 - 9:40pm. The first part of the class (45 to 90 minutes) includes lectures and discussions led by the course instructors. The second part of each class consists of team meetings, which include the students and mentors assigned to support each team. In general, we expect that it will be necessary for the team to meet face-to-face at least once per week **in addition to** the meeting time provided on Wednesday, and in addition to the time that team members devote to individual class and project tasks. These additional team meeting times are to be arranged by the teams and mentors. The mentors will use their own discretion whether to attend these additional meetings. The team will discuss and report its progress and activities to their mentors each week.

The team keeps a meeting and activity calendar as well as agendas and minutes for all meetings. Project and contact management are critical to managing team activities. Agendas, calendars, and minutes are submitted as part of the graded final workbook.

Class Impact

Here are some of the career paths for which this program prepares students:

High-Tech Start Up Companies	Large R&D Intensive Corporations	Venture Capital Industry
• Senior Mentors	• Corporate Venturing	• Partners
• Founders	• R&D Management	• Associates
• Business Development	• Strategic Technology Management	• Analysts
• Strategic Alliance Management	• IP Management	
• Technology Marketing		

Assignments

Each team will be responsible for completing all assigned worksheets and the following major deliverables:

- Innovation Charter
- Search Presentation
- Search Report
- Phase 1 Presentation
- Phase 1 Report
- Phase 2 Presentation
- Phase 2 Report
- Team Management Tools and Contact Logs

All team deliverables will be included in their *'Deliverables'* folder. These are due on specified weeks throughout the semester (see Course Schedule). The mentors will monitor and encourage team progress on each deliverable.

Evaluation Criteria

There will be three areas considered during evaluation:

Team Deliverables
Individual Contributions
Peer Evaluations

Team Deliverables. Each team will turn in the CTEC assignments, including each section mentioned in Team Deliverables, as well as the worksheets and team management reports. The team's mentors monitor the Deliverables folder on a weekly basis, which must be up-to-date at the weekly Wednesday team meeting for this purpose. The Deliverables folder is evaluated by the team's Mentors at the end of the semester and is a major source of the team grade. The Workbook is evaluated on technical correctness, completeness, as well as the amount, and quality of work. **Particular attention is paid to the decision-making of the team.**

Individual Contribution will be evaluated based on: (the evaluator is given in parentheses)

- attendance at class and team meetings (Instructors and Mentors).
- timely completion of assigned work (Mentors).
- contribution to the team meetings (Mentors) and class discussions (Instructors).
- quality of assigned work (Instructors and Mentors).
- performance measured against specific team role(s) (Instructors and Mentors).

Peer Evaluations. A peer evaluation form will be provided to every team member. Each team member will use the form to provide assessments of their own and their teammate's contributions.

Grading

There will be a total of 100 points available, distributed as follows:

Team Performance (Decision making, Deliverables quality)	30
Final Presentation	20
Contacts	10
Individual Contributions (10 at midterm and 20 at final)	30
Peer evaluation (5 at midterm and 5 at final)	10
TOTAL	100 points

$100 \geq A+ > 97 \geq A > 93 \geq A- > 90 \geq B+ > 86 \geq B > 83 \geq B- > 80 \geq C+ > 76 \geq C > 73 \geq C- > 70 \geq D+ > 66 \geq D > 63 \geq D- > 60 \geq F$

Textbook

There is no textbook required for the course. The materials for the course can be found at the CTEC web site. Each **team** will create a Deliverables folder for the completed Worksheets provided in the "Algorithm Materials" folder online. Course materials include:

- Syllabus and Schedule
- Worksheets
- Readings

Additionally, the lecture materials for the week will be posted on the CTEC website by 5pm on the Tuesday preceding the Wednesday lecture (assuming no technical difficulties).

Note on readings: Articles and reading materials will be provided in the "Readings" folder online. These materials provide valuable background and complementary information for the course. Students are strongly encouraged to read these materials and bring any questions they may have to class for discussion.
Please note: additional readings may be assigned on a "just-in-time" basis during the semester.

Time Commitment

Each student is required to meet each Wednesday night from 6:40 pm to 9:40 pm and with the team one other time per week. Students are also required to meet with other people necessary to complete the team's caseload. Finally, team members have individual work assigned to them by the team during the week. Assignments and meeting attendance will be reported to team mentors each week.

Attendance

Attendance at all regularly scheduled class meetings is mandatory. Team meetings with your team are mandatory. Meetings with other people to gather information about your project will be assigned in team meetings and are mandatory. Your participation in gathering data and preparing reports is mandatory. Your team mentors and team leader should be contacted in advance if you cannot attend a meeting.

Contact Information and Office Hours

If you have questions or concerns or are interested in talking about the course or your goals, it is recommended that you deal with them as follows:

- Simple procedural questions, i.e. regarding deliverables, dates, etc. – ask at the beginning of class, or email Roger Debo and copy Ted Baker and Stephen Tse.
- Academic questions regarding course content – ask in class, email the set of instructors, or ask the team mentor.
- Using email, set up a meeting with any of the instructors.

Professional Ethics

Any breach of professional ethics will result in dismissal from the class, an automatically failing grade in the course and a report to the university for further disciplinary action. A breach of professional ethics includes violating the conditions of course enrollment or academic dishonesty.

It is unethical to put your name on work for which you do not contribute. If for any reason you are only able to make minimal contributions to your team it is ethical and professional to report your actual level of contribution. You will have the opportunity to report your level of contribution at the end of the semester.

Projects

The CTEC Program is providing a portfolio of intellectual properties (IP) to this class. These technologies have come from a variety of public and private sources. In each case, the original owner of the IP retains all rights to their technologies, but has agreed to make them available to the CTEC Program for commercialization. Each team will be assigned a set of technologies and some of the remaining IP will be made available in a pool, for inclusion in the team's portfolio of potential projects.

While the pedagogy for the course calls for the teams to be self-directive as they apply the CTEC Algorithm; it is important to note that CTEC is responsible for commercialization and the IP rights remain with the owners of the IP.

CTEC is committed to launching and supporting new high growth ventures. It is also committed to preparing the next generation of entrepreneurs. Towards that end, students in this CTEC course sequence may be invited to continue their participation in each project at the conclusion of the course as it passes from this academic setting. Each student's level of commitment, dedication and contributions to the project will be considered when determining possible inclusion on the founding team.

CTEC 1

Course Schedule

Fall 2015

(Instructors reserve the right to make changes when deemed necessary)

Week	Topic	Assignments (uploaded to Deliverables folder)
Week 1 (9/2)	Course Intro – syllabus Introductions CTEC Introduction Opportunity Identification Students fill out forms	Submit NDAs and Information sheets (to Instructors)
***	**Notes Week 1: ***** **Students to announce drop or stay by noon Friday September 4th (to roger.debo@rutgers.edu) to allow instructors to finalize teams** **All Students MUST submit resumes to Roger no later than 5:00p Friday, September 4th.**	
Week 2 (9/9)	Search/Product Ideation Client relationships "No, but really, what can your technology ACTUALLY do?" Worksheet description Reading: "Bridging the Valley of Death" Assign Core Technologies Teams will be announced **after** the lecture on Week 2.	Opportunity Description Worksheet Picture Sheets
Week 3 (9/16)	Product Definitions Worksheet descriptions Creativity Methods (NGT)	Innovation Charter Technology Description Worksheets
Week 4 (9/23)	Problem Statement Market Research Worksheet descriptions Contact Worksheets	Technology Documentation Product Idea Worksheet Initial TPM Worksheet) Product Attributes Worksheet

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Week	Topic	Assignments
Week 5 (9/30)	Value Proposition Worksheet descriptions Selection criteria Library Resources	Product Attribute-Market Matrix Worksheet Summary TPM Market Description Worksheet Preliminary Market Assessment Worksheet Product Definition Worksheets
Week 6 (10/7)	***** IDEATION PRESENTATIONS**	
Week 7 (10/14)	***** IDEATION REPORTS DUE** Team Role Discussion Algorithm Phase I *Mentor Shuffle: Product Description*	Ideation Reports (Email copy to Instructors) Value Proposition WS Team Reformulation
Week 8 (1021)	Team Activity – "Pitch" Algorithm Phase 1 Discussion Worksheet discussion Phone Calling Techniques Reading – VOC, Griffin	1st Functional Assessment
Week 9 (10/28)	Financial Analysis Worksheet discussion Introduction to Business Models Technologist Communication	Functional Assessments
Week 10 (11/4)	How does Venture Capital work? Product reformulation worksheet Competitive Advantage Worksheets	Strategic Assessments Decision Point Checklist (Optional)
Week 11 (11/11)	***** PHASE 1 PRESENTATIONS** ***** PHASE 1 REPORTS DUE** Algorithm Phase II	Phase I reports (Email copies to Instructors) Technologist Communication draft (to Mentors)

Notes Week 11:
Phase I reports: one copy in Deliverables, electronic copies submitted to instructors via email by 6:40pm on Nov 11th.

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Week	Topic	Assignments
Week 12 (11/18)	Algorithm Phase II Worksheet Discussion Value Proposition Revisited *Mentor Shuffle – Business Model*	Competitive Advantage Worksheet (Deliverables – email Instructors & Execs) Product Reformulation Worksheet
Week 13 (11/25)	**THANKSGIVING HOLIDAY**	
Week 14 (12/2)	Wrap-up TBD	Preliminary Important Issue List Phase II Functional Analysis Phase II Strategic Analysis Pro forma Income Statement
Week 15 (12/9)	*****FINAL PRESENTATIONS** (Copy emailed to Instructors) *****Preliminary PHASE 2 Report Due** (Copy emailed to Instructors) *****FINAL DELIVERABLES Due** (Final versions uploaded to Deliverables Folder) *** **Information Gathering Logs Due** (Uploaded to Deliverables Folder)	
	***** Peer Evaluations**	**Due: 5:00p Thursday, Dec. 10** (email to Roger)

Notes Week 15:
All Deliverables except Peer Evaluations to be submitted by **6:40pm on Dec 9**