**IEE 552 – Strategic Technology Management**

* **Summer 2013– Line Number: 41394**
* **Summer Session C: May 20 to July 12**
* **Course Overview, Directions and Timelines -**

Welcome to IEE 552. Here is the plan for the semester:

* The course syllabus follows. This syllabus contains the course description, learning objectives and recommended timeline for the semester.
* **Only four firm dates are present for the entire course (IF you are starting at the designated start of the Summer C semester):**
  + **New Product Conceptual Design ~ Due close of business Friday, June 7 (close of business means it is loaded into the Assignments folder when I get up on Saturday, June 8)**
  + **New Product Plan ~ Due close of business June 28**
  + **Complete New Product Development Concept, Product Plan and Development Plan ~ Due close of business July 12**
  + **Complete Literature Search Document ~ Due close of business on July 12**

IF there are any issues with any of the timelines offered above, please contact me as soon as possible. Thanks and enjoy the course. Dan

Learning Objectives: Upon successful completion of the course the student should have mastered the following concepts and capabilities:

* Fully comprehend and be capable of analyzing the current issues related to technology driven companies.
* Develop a capability to assess and listen to Desired Customer Outcomes.
* Develop a capability to predict technology transition points.
* Understand how to develop a Business Strategy.
* Be able to strategically position technology in the Business Strategy.
* Understand how to manage the New Product Development process.
* Understand how to convert technology into profitable products.
* Be able to assess the changing organizational implications and the role of technology in these changes.
* Understand how “knowledge” products differ from “hardware” products
* Understand management’s role in the strategic technology management process.
* Understand the dynamics of all the dimensions of strategic technology management.

**Course Grading Plan:**

The course grade will be determined based upon the total points each individual students achieves in the following categories:

* Literature Search Document 100 points
* Class Deliverable #1 – CD 50 points
* Class Deliverable #2 – PP 100 points
* Class Deliverable #3 – Mgmt Preso 150 points
* Total Available Points 400 points

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* **ASU Policies Applied to This Course -**

1. Absence & Make-Up Policies

Accommodations will be made for religious observances provided that students notify the instructor at the beginning of the semester concerning those dates. Students who expect to miss class due to officially university-sanctioned activities should inform the instructor early in the semester. Alternative arrangements will generally be made for any examinations and other graded in-class work affected by such absences.

1. Classroom Behavior

Cell phones and pagers (must be/or state alternative rule) turned off during class to avoid causing distractions. The use of recording devices (is/is not) permitted during class. Any violent or threatening conduct by an ASU student in this class will be reported to the ASU Police Department and the Office of the Dean of Students.

1. Academic Integrity

All students in this class are subject to ASU’s Academic Integrity Policy (available at <http://provost.asu.edu/academicintegrity>) and should acquaint themselves with its content and requirements, including a strict prohibition against plagiarism. All violations will be reported to the Dean’s office, who maintain records of all offenses.

1. Disability Accommodations.

Suitable accommodations will be made for students having disabilities and students should notify the instructor as early as possible if they will require same. Such students must be registered with the Disability Resource Center and provide documentation to that effect.

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|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Week | Mod | Speak | **Topic** | Worth |
| 1 | 1 |  | Course Overview and Introductions, Establishing Expectations |  |
| 1 | 2a | \*\*\* | Introduction to Strategic Planning |  |
| 1 | 3a | \* | Business View of STM, Balanced Score Card |  |
| 1 | 4 |  | Reading the Balance Sheet and the P & L Statement |  |
|  | 5 |  | No class – University Holiday |  |
| 2 | 6 |  | Strategic Planning Process |  |
| 2 | 7 |  | Strategic Execution |  |
| 2 | 8 | \*, \* | Desired Customer Outcomes and the House of Quality |  |
| 3 | 9,9a,9b |  | Introduction to the Design Process |  |
| 3 | 10 | \*, \* | Stealth and Blue Ocean |  |
| 3 | 11 | \* | New Product Development – I, including SCRUM |  |
| 3 | 12 | \* | New Product Development – II, Robust Design, DfSS |  |
|  |  |  | **D1 Delivery – close of business June 7** | **50 pts** |
| 4 | 13a | \* | Stage Gate and Technology S Curves |  |
| 4 | 15 |  | Idea Generation |  |
| 4 | 16 |  | The Invention Process |  |
| 4 | 17 | \* | R & D Portfolio Management |  |
| 4 | 18 |  | Management Theory and Leadership Theory |  |
| 5 | 19 |  | Leadership, Leading High Performance Work Teams |  |
| 5 | 20 | \* | Collaboration, Collaborative Design |  |
| 5 | 21 | \* | Knowledge Management |  |
| 6 | 22 |  | Strategic Links from NPD to Operational Excellence |  |
| 6 | 23 | \* | Strategy Drives Structure – the Galbraith Model |  |
|  |  |  | **D2 Delivery – close of business June 28** | **100 pts** |
| 6 | 24 | \* | How to Structure the Organization, Strategic Core Competencies |  |
| 7 | 25, 26 | \* | Managing Intellectual Property – I & II |  |
|  |  |  |  |  |
| 7 | 27 | \* | SOx and Implic, Predict, Directions and Trends, Course Summary |  |
|  |  |  | **D3 – close of business July 12** | **150 pts** |
|  |  |  |  |  |
|  |  |  | **Lit Review Posted by close of business July 12** | **100 pts.** |

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* **Summer 2013 -**

**Project Review**

**Team Reviewed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Reviewer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Your New Product Development Concepts delivered during week 14 will be evaluated on the following criteria:

NPD Project Positioning – is it strategically the right thing to do? \_\_\_\_/30

NPD Project Scope – can this be done? Is it too big / too small? \_\_\_\_/30

NPD Project Technical Merit – is their sufficient content to succeed? \_\_\_\_/30

NPD Project Economic Feasibility – can this be done for the resources planned?

Can this be economically successful? \_\_\_\_/30

Style of Presentation – how can the student improve its presentation

in order to better gain acceptance? \_\_\_\_/30

Overall comments -

**Total \_\_\_\_\_/150**

(Basis for scores: 27-30 = excellent;24-26= very good;21-23=good;18-20= fair;<18= poor)

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As a minimum it is necessary to go through the following steps for the creation and successful launch of a new product.

1. D1 - Concept Development

* Product / Service Definition: Based on a market input, an intuition or a promising new technology, present what you believe is a product concept.
* Identify what are the critical components.
* Define what technologies will probably be required to design and manufacture.
* Define what are the core competencies required to successfully develop.
* Customer and Market Analysis: identify the market for the product in terms of target customers and what the desired customer outcome of this product must be to succeed in the marketplace. What is the market size?
* Competitive Analysis: what are your assumptions, what are the market trends, what is the competitive environment and what are the risks you anticipate?

1. D2 - Product Planning

* Product Business Plan: What is your market window in order to have a competitive advantage, what is your anticipated break-even time, estimate what it will cost to develop and deliver this product and estimate your revenue stream as the product matures. The complete quantification of the plan.
* Formalize a Customer Definition with DCO’s formalized, demographics, size and locations, needs, willingness to pay, etc.
* Development Requirements Plan: what are your strategies for development and what are the critical requirements to achieve the goal?

1. D3 - Business Plan Creation

* Complete management presentation of your business plan.
* What Business are you really in?
* Complete financials package of the costs and returns expected.
* What will be required to conduct the strategic technology management for this product?
* What are the organizational issues you anticipate and what is your organizational technology management plan?
* What are the resources required and how will you gain access to them?
* What IP is required to establish differentiation and how will you gain access to this?
* All other STM aspects covered throughout the class.

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From websites, analyze 4-6 references and develop a literature review document as an overview of the learnings you gleaned from the site. Present in class if in class ~ or post on the class assignments folder if taking the class on-line. **Max TEAM of 2.**

# Students Selecting Module Topic

|  |  |  |
| --- | --- | --- |
| 1. | 2 | Globally Integrated Enterprise\* |
| 1. | 2 | World Is Flat\* |
| 1. | 2 | Strategy and the Internet\* |
| 1. | 3 | Balanced Score Card, incl. BSC examples\* |
| 1. | 8 | Desired Customer Outcomes, starting with article Value Chains vs. Supply Chains |
| 1. | 8 | House of Quality, starting with classic HoQ article\* |
| 1. | 9 | Strategic New Product Development Process, starting with classic Toyota Second Paradox article\* |
| 1. | 10 | Stealth – Disruptive Innovation, starting with Disruptive Innovation article\* |
| 1. | 10 | Blue Ocean, starting with Blue Ocean summary article\* |
| 1. | 12 | Robust Design and Design for Six Sigma, starting with Robust Design article\* |
| 1. | 13 | Stage Gate Process, starting with Stage Gate Process article\* |
| 1. | 17 | Managing the R&D Process, starting with Mike Greiner’s R&D Portfolio Mgmt. article\* |
|  | 18 | Leadership, starting with Drucker on Leadership article |
| 1. | 20 | Collaborative Design, starting with Intermediation and Disintermediation paper and Establishing the Logical EI Progression paper\* |
|  | 21 | Knowledge Management, starting with classic KM paper\* |
| 1. | 23 | Galbraith Model for Organizational Structure, starting with classic Galbraith Model paper\* |
| 1. | 24 | Strategic Core Competencies – Prahalad, starting with Core Competency Research Results paper\* |
| 1. | 25 | Managing Intellectual Property (IP), starting with SBA Access to IP article\* |

**\* = Please note that these articles have been found on an open web search and that usage in an educational environment has been approved.**

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All deliverables have due dates.

* It is expected that the Lit Review Presentations will be by individual or two person team and take the equivalent of 20-30 minutes to present. These are due per the schedule above.
* All presentations will be via Power Point and posted on the web.
* All presentations will be electronically submitted to the instructor.

Due Dates are as follows:

* + **New Product Conceptual Design ~ Due close of business June 7**
  + **New Product Plan ~ Due close of business June 28**
  + **Complete New Product Development Concept, Product Plan and Development Plan ~ Due close of business July 12**
  + **Complete Literature Search Document delivered electronically ~ Due close of business July 12**

There is a 10% per day late fee for any deliverables submitted after these dates!!