**BA in Management Program   
Spring 2023**

**MGMT 404 – Technology Management**

**Instructor:** Aras Can Aktan

**Office:** FMAN 1086

**Phone:** (216) 568-7192

**Fax:** (216) 483-9699

**E-mail:** can.aktan@sabanciuniv.edu

**Web:** SuCourse

**Office Hours:** By appointment

|  |  |  |  |
| --- | --- | --- | --- |
| **Type** | **Time** | **Days** | **Where** |
| Class | 8:40 am - 9:30 am | T | FASS 1103 |
| Class | 2:40 pm - 4:30 pm | F | FASS G022 |

**Disclaimer:**

We may have to revise the course plan according to the reassessment to be made country-wide, regarding higher education, at the beginning of April. The content to be delivered is certain but the method of course delivery, the number and dates of assignments, and some other details are subject to change.

**Course Objective:**

This course is designed to meet the needs of future managers, entrepreneurs, consultants, and investors who must understand the dynamics of and develop business strategies in technology-based industries. The course first explores how technological innovation evolves, diffuses, and affects the competitive dynamics of markets. It then explores how to develop and implement technology strategies that create competitive advantage for firms as well as how to protect various technological assets, capabilities, etc. Moreover, we will focus on how to invest in research and development and how to manage people and organization-related factors for more effective technology management.

**Learning Outcomes:**

Upon successful completion of the course, the student should be able to:

1. Define different types and sources of innovation and technology development
2. Understand the foundations and implications of the dynamics of innovation, technology evolution, technology adaption, and technology diffusion.
3. Explain key steps and processes in developing a technology strategy and commercializing different technologies and innovations
4. Identify the technological environment within which a firm operates or wants to operate.
5. Describe kinds of intellectual property and know their implications for generating competitive advantage under different dynamics.
6. Know different types of organizational structures and human resources practices that firms can use to innovate and appropriate value from their technology.

**Course Material:**

I will have course material posted on SuCourse for each week.

Textbook: Shane, Scott A. (2014). Technology Strategy for Managers and Entrepreneurs: Pearson New International Edition. Pearson Education Limited *(it is optional)*

**List of Cases**

|  |  |  |
| --- | --- | --- |
| **Case 1** | **Date:** | **Week 4** |
| Case:  Type:  Subject:  Teamwork: Grading: | | TOGG  Paper  Technology Diffusion  Yes  Team Assignment |
| **Case 2** | **Date:** | **Week 7** |
| Case:  Type:  Subject:  Teamwork:  Grading: | | Deloitte Fast 50 Turkey  Paper  Technology Commercialization  Yes  Team Assignment |
| **Case 3** | **Date:** | **Week 10** |
| Case:  Type:  Subject:  Teamwork: Grading: | | Unomoi  Paper  Technology Strategies- Value Innovation  Yes  Team Assignment |
| **Case 4** | **Date:** | **Week 11** |
| Case:  Type:  Subject:  Teamwork: Grading: | | Chief Innovation Officers  Paper  Organizing and Managing Human Resources for Technology  Yes  Team Assignment |

**Course Web:**

The course web will have all the resources the student will need: course PowerPoint slides, selected readings, and other material I will post.

For all assignments, your work will be checked by Turnitin. Sabanci University uses a very powerful web-based tool called Turnitin. Turnitin is the worldwide standard in online plagiarism prevention. It allows instructors to compare student papers against a database composed of millions of articles. Every paper you submit will be scanned by Turnitin, and the results will be reflected in your grades.

**Instructional Design:**

The course will be interactive. The students must be prepared to interact with the professor, in groups, and be able to constructively participate to garner knowledge from the course. The students will have group assignments to complete during class time.

**Grading**:

|  |  |
| --- | --- |
| Class participation | : 15% |
| In-class case assignments | : 20% |
| Term project | : 30% |
| Final exam | : 35% |
|  |  |

Peer Evaluation in Teamwork

Students will evaluate the contribution of the team members to their team projects and assignments. Each student will divide 100 points between the members of her team, including herself. The scores should not be merely functions of time spent by each member, but they should be measures of the "contribution;" their relative contribution to the idea generation, research, analysis, writing, oral presentation, report writing, etc. If the team was highly functional, and each member did what they committed themselves to, then the student can assign the same mark to each member of the team. If, on the other hand, some members of the team did not fulfill their commitments and did not contribute as much as the others, then points can be distributed unevenly. The points submitted by team members will be aggregated by the instructor, without disclosing the individual peer evaluations to the students. In case there is no consensus among the team, for example, if three students divide the marks evenly and the fourth one divides them unevenly, then the instructor will use his/her judgment to assign peer evaluation marks--possibly after meeting with the members of the team. In cases where there are conflicting marks, it is most likely that the instructor will meet with the team members and provide a mark based on an interview.

**Requirements:**

**Class Participation (15%):** Participation is highly encouraged, and the instructor may call on class members if necessary. These points are **purely discretionary**. As you will be a professional, you must contribute to your business meetings and sessions, and I expect you to start now. Attendance is mandatory per Sabanci University guidelines. This is a very interactive class, and I expect you to participate.

**In-class case assignments (20%):** We are going to have 4 case discussions (each 5%) on Weeks **4, 7, 10,** and **11** as outlined in the previous sections. Before the relevant classes, I am going to share several articles from the press regarding the concerned company and you are supposed to read and think through these articles. During class, we are first going to have a general discussion about that case around the articles assigned. After that, I will give you some question(s) and you need to provide a small response letter (in word) as a group where you answer these question(s). The questions will involve analyzing a challenge and giving some recommendations to the respected company. The assignment will be completed in the class and will be due **end of class**. I will provide all the relevant instructions in class during the case discussions.

Please email the instructor your groups (include the **names,** and **IDs** of the students and **find a name** for your group) no later than **March 17 Friday 23.59 Turkish Time.** You will be in the same groups also for the term project. The groups are expected to be between 6-8 people depending on the size of the class.

**Term Project (30%): Technology Consulting Project**: Same groups of 6-8 people (see above) to participate in a consulting project acting as consultants and serving a demanding client. Groups will have to select one of the proposed research topics linked to technology and innovation management (please see below). Consulting projects will take offline class hours and will be presented to the class within **Week 13**.

1. Self-driving cars: Myth or real?
2. Luxury goods distribution: Online strategy vs. branded stores
3. To pay or not to pay? The war against banks and credit card companies. Alternative transaction payment methods and tools.
4. The war against computer crime
5. Digital identity and privacy protection in information-based societies.
6. Venture capital firms in Silicon Valley: What are the latest investment strategies?
7. The recyclables: circular economy and technological opportunities in handling trash.
8. Searching for alternative sources of energy: Is there anything beyond fossil fuels?
9. Life and activity tracking: Emerging industries built on big data
10. A world of batteries: Will they electrify cars in the future?
11. Pay as you drive: The booming of the free-floating car-sharing services
12. Food home delivery is booming: Networking and business opportunities
13. The “other” entertainment services: (Online) betting and gaming
14. Mega yacht wars: Demand and supply determinants of the luxury boats industries

Please email the instructor your groups between 6 to 8 people (include the **names, IDs** of the students and find a **name** for your group) and your **project preferences** from the above list (please provide 5 choices as 1-most preferred and 5-least preferred) no later than **March 17 Friday 23.59 Turkish Time**. If there are some overlaps in the company preferences, the first come first serve rule will be applied. Therefore, it is better to start your planning soon. I am going to announce your assigned project and send you an engagement letter describing your project within **Week 4 (between March 20 and 24).**

On **Week 9,** I will ask you to submit a mid-term report for your term project. The deadline will be **April 28 Friday 23.59 Turkish time**. I am going to provide all the necessary instructions for that document before the submission deadline. I will also provide detailed feedback on your mid-term report so you to complete your project effectively.

Moreover, the class on **Week 12** will be dedicated to discussing the final structure of your presentations. I am planning to see each group on **May 16** that week and answer your questions on your reports and presentations before submission. Before that day, I will ask you to submit a pre-read document and related instructions will also be shared in due time.

The final deliverables will be a report to be submitted by **May 31 Wednesday 23.59 Turkish Time** and a PowerPoint presentation to be delivered during the classes on **May 23 and 26 (Week 13)**. Please send your presentations also on the same day as outlined.

**Final Exam (35%):** The final exam is a comprehensive exam. You will be expected to apply all the tools discussed in class to make strategic recommendations. The subject matter for the final exam includes all material covered in the course including lecture slides, in-class cases, assignments, and oral information provided in the lectures. Examinations must be taken at the scheduled time and day. Only students with university-approved excuses can take make-up exams.

**Academic Honesty:**

Learning is enhanced through cooperation; as such, you are encouraged to work in groups, and ask for and give help freely in all appropriate settings. As a matter of personal integrity, you should only represent your own work as yours. Any work that is submitted to be evaluated in this class should be an original piece of writing, presenting your ideas in your own words. Everything you borrow from books, articles, or websites should be properly cited. Using ideas, text and other intellectual property developed by someone else while claiming it is your original work is *plagiarism*. Copying from others or providing answers or information, written or oral, to others is *cheating*. Unauthorized help from another person or having someone else write one’s paper or assignment is *collusion*. Cheating, plagiarism, and collusion are serious offenses that could result in disciplinary action.

**Classroom policies and conduct**

Sabancı BA in Management Program values participatory learning. Establishing the necessary social order for a participatory learning environment requires that we all:

* Come prepared to make helpful comments and ask questions that facilitate your own understanding and that of your classmates. This requires that you complete the assigned readings for each session before class starts.
* If you are participating online, make sure you are in a good, quiet working environment and that your cameras and microphones function properly.
* Mute yourself if you are not talking and listen to the person who has the floor.
* Use your technological devices for watching and listening to the session, doing in-class exercises, and participating in the course, NOT for personal purposes.

**Course Schedule:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Week 1** | | **Dates:** | **28 Feb & 3 Mar** | |
| Topic: | | | Introduction and course overview | |
| **Week 2** | | **Dates:** | **7 & 10 Mar** | |
| Topic: | | | Technology evolution | |
| **Week 3** | | **Dates:** | **14 & 17 Mar** | |
| Topic: | | | Competitive implications of technology evolution | |
| Requirements: | | | Team formation and project preferences | |
| **Week 4** | | **Dates:** | **21 & 24 Mar** | |
| Topic: | | | Technology diffusion | |
| Case: | | | TOGG | |
| Requirements: | | | In-class case assignment | |
| **Week 5** | | **Dates:** | **28 & 31 Mar** | |
| Topic: | | | Sources of technology development | |
| **Week 6** | | **Dates:** | **4 & 7 Apr** | |
| Topic: | | | Technology and R&D investments | |
| **Week 7** | | **Dates:** | **11 & 14 Apr** | |
| Topic: | | | Technology commercialization | |
| Case: | | | Deloitte Fast 50 Turkey | |
| Requirements: | | | In-class case assignment | |
| **Week 8** | | **Dates:** | | **18 Apr (no class on Apr 21 due to public holiday)** |
| Topic: | | | | Technology strategies- Timing of entry |
| **Week 9** | | **Dates:** | | **25 & 28 Apr** |
| Topic: | | | | Technology strategies- Value innovation |
| Requirement: | | | | Mid review document for the group project |
| **Week 10** | | **Dates:** | | **2 & 5 May** |
| Topic: | | | | Protecting technology |
| Case: | | | | Unomoi |
| Requirements: | | | | In-class case assignment |
| **Week 11** | | **Dates:** | | **9 & 12 May** |
| Topic: | | | | Organizing and managing human resources for technology |
| Case: | | | | Chief Innovation Officers |
| Requirements: | | | | In-class case assignment |
| **Week 12** | | **Dates:** | | **16 May (no class on May 19 due to public holiday)** |
| Topic: | | | | Touch base meetings before presentations |
| Requirements: | | | | Pre read document |
| **Week 13** | | **Dates:** | | **23 & 26 May** |
| Topic: | | | | Group project presentations |
| Requirements: | | | | Delivering and presenting team projects |
| **Week 14** | | **Dates:** | | **30 May** |
| Topic: | | | | Wrap up of the course |