ÜSKÜDAR UNIVERSITY

 Faculty of Engineering and Natural Sciences

 Industrial Engineering Department

To All Senior Students of the Industrial Engineering Program,

As you are well aware there are two compulsory courses on your curriculum: IE491 Graduation Project and IE492 Graduation Thesis which serve as an opportunity for you to put into practice in a project framework some of the theoretical techniques covered in your courses. The work you will undertake is intended to continue and cover two semesters. It involves selection of a project topic, defining a problem, survey of relevant literature, formulating a model, computational experiments and solution, and writing a thesis document reporting all your effort and progress. You will be working in team of your classmates and have an IE faculty member as a project/thesis advisor. We would like to pair you with an advisor whose research interests match with your project/thesis learning objectives but at the same time we need to balance the work load of our faculty. Therefore you may not be able to work with the advisor of your choice. Follow the directions below to submit your team roster and preference list.

**Step 1:** Form a project/thesis team with your classmates, min=1 max=5 team members. Select your teammates carefully as you will be stuck with them until the end of the semester, in case you experience strong discord within your team you will not be allowed to break it up even. The whole team will get the same grade from *project progress check points* and reports no matter the discrepancy among the amount of contribution by team members. Individual team members may receive different grades based on their performance a) in *weekly meetings* with their advisor, and b) in the end-of-semester *project/thesis presentation*.

**Step 2:** Make a preference list of project topics & advisors for your team. Examine the project topics offered by our faculty given on the next page. You may propose a topic that is not listed below but you still need to specify with whom you would like to study it with. You cannot list the same faculty member more than once. After your team is assigned to an advisor with everyone’s agreement

**Step 3:** Use the table at the end as a template to submit your team roster and project preferences to **tugbayasemin.karagoz@uskudar.edu.tr** by **11.11.2021.** The advisor-team matchups will be announced.

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| **Faculty Member** | **Project Topics** | **Techniques/Tools** |
| **Prof.Dr. Mehmet Savsar** | Modeling and analysis of inventory systems; Buffer storage analysis; Just in time production | Demand forecasting; Inventory models; Kanban systems and applications. |
| Process improvement through system simulation and OR applications | Analysis and redesign of a production or a service system using IE tools; simulation applications.  |
| Manufacturing systems analysis and Assembly line balancing | Manufacturing systems analysis; Assembly line balancing techniques and applications to a specific problem. |
| Location analysis and Facility layout design. | Location analysis of certain facilities such as fire stations etc. using LP or other IE tools. Facility planning and applications of layout design tools. |
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| **Asst.Prof. Münire Berna Beşkese** | How to become best engineers |  |
| Investigating best universities in the world |
| Investigating best universities in Turkiye |
| Investigating best engineers in the world |
| Investigating best engineers in Turkiye |
| Establishing best engineer education system |
| Establishing best engineer lifelong education system |
| E-commerce |
| Ergonomic design |
| Factors effecting industrial engineering competency |
| Innovation |
| CRM |
| System analysis and improvement |
|  |
| **Asst.Prof. MuhammedEnis Bulak** | Production Planning and Control |  |
| Multi-Criteria Decision Making |
| Sustainability |
| Quality Control and Management |
| System Simulation |
| Product Design and Usability |
| Statistical Methods in Service/Manufacturing Sector |
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| **Asst.Prof. Hasan Çiçek** | Quality Management system |  |
| Quality Control |
| Human Resource Management |
| Supply Chain Management |
| Process Improvement |
| Production Planning |
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| **Asst.Prof. Osman Murat Anlı** | **Design and Implementation of Computerized Learning Tools****Domains:** Production Planning & Control, Inventory Management, Warehouse Operations Management, Supply Chain Management, Retail Management, Apparel Production & (Fashion) Management (you will select one of these areas in your project, you may also propose a different one)**Aim:** The tool you will develop will be a web-based online "game". This game is a simulation of management decisions in a domain. This tool will help 1st-2nd-3rd year students experience and learn an Ind.Eng. subject matter in a more practical, realistic, gaming kind of environment. They should be able to explore it at their own pace, learn what is going on, analyze available information, make decisions and experience the results of their decisions, and solving interesting problems.**What You Will Gain:** You will get a strong understanding of planning and management processes of a specific domain; learn what kind of data is collected, stored, and how it is analyzed; learn how to design an environment that motivates students to discover and learn on their own; learn how modern software development is evolving. | **Implementation:** You do not need to know programming, web development or database modelling beforehand. We will use a No-Code Platform ([www.xpoda.com](http://www.xpoda.com)) where almost all software development and deployment details are taken care of for you. You only need to worry about the logic and rules of the game you are designing and what the players of the game should see on their screened. If you prefer, you can use another No-Code or Low-Code Platform.**References:** If you want to research further what all this entails, these type of educational tools are usually referred to as Serious Games, Learning Games, Management Games, Online/Browser Management Games, etc. Also a related topic is gamification. |
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| **Asst.Prof. Orkun Kozanoğlu** | Supply chain management |  |
| Production system design and improvement |
| Optimization |
| System simulation |
| Multi-criteria decision making |
| Lean manufacturing |
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| **Asst.Prof. Murat Elhüseyni** | Minimum Cost Network Model in Energy | Excel solver or GAMS |
| Investment Planning Model in Energy |
| Mathematical Model for Student Group Assignment in a non-overlapping way in a course  |
| Course Timetable Scheduling to minimize conflicts |
| Teaching Assistant-task assignment problem |
| Wildfire Management using Optimization Model |
| Capacitated p-median problem |
| Preventive Maintenance Planning of railcars on a specific metro line |
| Game Theory in Electricity Mark- Finding the Nash and collusive equilibriums by enumeration algorithm | Spreadsheet(Excel) and Solver (Excel solver or GAMS) |
| Market Clearing in Energy Markets: Finding the best power dispatch using merit ordering and Bid Auction Model |
| Game Theory in Electricity Markets-Finding collusive equilibriums by logistic regression |  |
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| **Team Roster** |  |
|  | **Student ID** | **Name Last name** |
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| 2. |  |  |
| 3. |  |  |
| 4. |  |  |
| 5. |  |  |
| **Project Preferences** |
|  | **Faculty Member** | **Project** |
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| 6. |  |  |
| 7. |  |  |

Note: You need to put **all 7 faculty members** according to your preference order.