**Middle East Technical University**
**Graduate School of Social Sciences**
**Doctor of Philosophy in Business Administration**
**In the Field of Quantitative Decision Methods**

**Aim of the Ph.D. Program:** Quantitative Decision Methods is an interdisciplinary field that aims to give students the quantitative tools and models of judgment and decision making that is necessary to support managerial decisions in a wide variety of areas. The PhD candidates of this program will be able to use several techniques to improve their quantitative decision analysis and to design their original research.

**Admission Criteria for the Ph.D. Program:**
Students with a graduate degree can apply to the normal Ph.D. program directly whereas those who have an undergraduate degree from a four year university should apply to the integrated Ph.D. program. Student admission to the program is based on methods determined by METU Department of Business Administration and the related legislation.

**Total Duration:**
The time allowed to complete the Ph.D. program is **8 semesters** for students with a master’s degree and **10 semesters** for the students who enter the integrated program with an undergraduate degree.

**Total Credits:**
- **30** credits are required for students holding master’s degree
- **51** credits are required for students holding undergraduate degree.
Scientific Preparatory Program

Students who have a graduate or undergraduate degree may apply to the program. However, they need to take scientific preparation courses before starting the courses in the program. They may be exempted from these courses if they have taken the courses previously. Upon request, the Academic Committee reviews the student’s records, conducts exams when necessary and decides whether the student can be exempted from the courses listed below:

- Statistics
- Microeconomics
- Macroeconomics
- Calculus / Differential Equations (for METU MATH 119, 120, 219)

Ph.D. Program

- 5 must courses (15 credits in total)
- 5 elective courses (15 credits in total)
- 1 must research paper course (non-credit)
- Ph.D. dissertation

Note: Applicants who successfully complete the scientific preparatory program should follow this schedule.

Integrated Ph.D. Program

- 7 must courses (21 credits in total)
- 10 elective courses (30 credits in total)
- 1 must research paper course (non-credit)
- Ph.D. dissertation
## Curriculum of Ph.D. in Quantitative Decision Methods

### First Year

#### Fall Semester

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA 6203 Theories in Decision Sciences</td>
<td>(3-0)3</td>
</tr>
<tr>
<td>BA 6505 Applied Regression Analysis</td>
<td>(3-0)3</td>
</tr>
<tr>
<td>Elective (Restricted)*</td>
<td>(3-0)3</td>
</tr>
</tbody>
</table>

#### Spring Semester

<table>
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<th>Courses</th>
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<tr>
<td>BA 6506 Applied Multivariate Analysis</td>
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<tr>
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<thead>
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<th>Courses</th>
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<tbody>
<tr>
<td>BA 5505 Research Methods and Ethics in Business / Elective (Restricted)*</td>
<td>(3-0)3</td>
</tr>
<tr>
<td>BA 6507 Applied Time Series and Panel Data Analysis</td>
<td>(3-0)3</td>
</tr>
<tr>
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<tr>
<td>Elective (Restricted)*</td>
<td>(3-0)3</td>
</tr>
<tr>
<td>BA 6021 Research Paper</td>
<td>NC</td>
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</table>

### Third and Fourth Years

#### Fall Semester

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BA 6099 Ph.D. Dissertation</td>
<td>NC</td>
</tr>
<tr>
<td>BA 90xx Special Topics</td>
<td>NC</td>
</tr>
</tbody>
</table>

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<td>BA 6099 Ph.D. Dissertation</td>
<td>NC</td>
</tr>
<tr>
<td>BA 90xx Special Topics</td>
<td>NC</td>
</tr>
</tbody>
</table>

*Requires approval of the advisor

** Elective (Restricted) for the students of Integrated Ph.D. Program

### Additional courses that must be taken within the scope of Integrated Ph.D. Program

#### First Year

#### Fall Semester

<table>
<thead>
<tr>
<th>Courses</th>
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</thead>
<tbody>
<tr>
<td>BA 5505 Research Methods and Ethics in Business</td>
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</tr>
<tr>
<td>BA 5503 Management Science</td>
<td>(3-0)3</td>
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<tr>
<td>Elective (Restricted)*</td>
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<tr>
<td>Elective (Restricted)*</td>
<td>(3-0)3</td>
</tr>
</tbody>
</table>

*Requires approval of the advisor
**MUST COURSES (Credit Courses)**

**PhD Program**
- BA 5505 Research Methods and Ethics in Business (3-0)3
- BA 6203 Theories in Decision Sciences (3-0)3
- BA 6505 Applied Regression Analysis (3-0)3
- BA 6506 Applied Multivariate Analysis (3-0)3
- BA 6507 Applied Time Series and Panel Data Analysis (3-0)3

**Integrated program**
- BA 5503 Management Science (3-0)3
- BA 5506 Quantitative Methods in Business (3-0)3

**ELECTIVE COURSES**
- BA 6204 Experimental Design for Decision Sciences (3-0)3
- BA 5504 Optimization Methods for Management (3-0)3
- BA 6811 Microeconomic Theory for Business (3-0)3
- BA 5129 Strategic Games for Managers (3-0)3
- BA 5140 Strategic Behavior and Experiments (3-0)3
- BA 5518 Decision Analysis: Behavioral & Psychological Perspectives (3-0)3
- BA 5826 Industrial Organization (3-0)3
- BA 5517 Decision Analysis: Tools and Methods (3-0)3
- BA 5519 Simulation and Quantitative Models in Business (3-0)3
- BA 5115 Business Ethics (3-0)3
- BA 5510 Introductory Econometrics for Finance (3-0)3
- BA 5511 Business Forecasting (3-0)3
- BA 5618 Project Management (3-0)3
- BA 5135 Leadership Theory and Application (3-0)3
- BA 5137 Entrepreneurship (3-0)3
- BA 5514 Risk Management (3-0)3
- BA 5714 Consumer Behavior (3-0)3
- BA 5725 Brand Management (3-0)3
**PSYCHOLOGY DEPARTMENT**

PSY 652 Attitude Measurement and Scale Development (3-0)3  
PSY 656 Inter-group Relations (3-0)3  
PSY 552 Groups (3-0)3  
PSY 655 Intra-group Processes (3-0)3  
PSY 556 Applied Social Psychology (3-0)3  
PSY 519 Human Factors and Performance (3-0)3  
PSY 500 Research Methods (3-0)3  
PSY 510 Advanced Design and Statistical Procedures in Assessment of Psychology Change (3-0)3  
PSY 504 Leadership and Motivation (3-0)3  

**INDUSTRIAL ENGINEERING DEPARTMENT**

IE 553 Linear Optimization (3-0)3  
IE 562 Stochastic Processes in Decision Models I (3-0)3  
IE 558 Multiobjective Decision Making (3-0)3  
IE 566 The Design and Analysis of Experiments (3-0)3  
IE 583 Qualitative Methods for Engineers (3-0)3  
IE 554 Discrete Optimization (3-0)3  
IE 555 Nonlinear Optimization (3-0)3  

* Elective courses must be approved by the advisor and the department.