

Content

| Course Code | Course Name | Semester | Theory | Practice | Lab | Credit | ECTS |
|-------------|----------------------------|----------|--------|----------|-----|--------|------|
| IND 690 | Research Topics in IE & OR | 2 | 3 | 0 | 0 | 3 | 8 |

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| Prerequisites | |
| Admission Requirements | |

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| Language of Instruction | English |
| Course Type | Compulsory |
| Course Level | Doctoral Degree |
| Objective | The objective of the course is to encourage student to explore various research areas of industrial engineering and operations research. Recently published research papers are discussed and contemporary research fields of industrial engineering and operations research are identified. |
| Content | <ul style="list-style-type: none">- Theory building- Quantitative approach- Qualitative approach- Case studies- Data collection methods- Revised simplex method- Dual simplex method- Bounded variables technique- Formulating integer programming problems- Classification of multi-criteria decision making solutions and models- Discussion on the status of multi-criteria decision making theory and practice- Contemporary methods for investment evaluation and justification. Real options.- Discussion on product development and process management |
| References | |

Theory Topics

| Week | Weekly Contents |
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| 1 | Ethics in science and engineering. |
| 2 | Theory building. Quantitative approach; Qualitative approach. |
| 3 | Case studies. |
| 4 | Data collection methods. |
| 5 | Revised simplex method. |
| 6 | Dual simplex method. |
| 7 | Bounded variables technique. |
| 8 | Formulating integer programming problems. |
| 9 | Classification of multi-criteria decision making solutions and models. |
| 10 | Discussion on the status of multi-criteria decision making theory and practice. |
| 11 | Contemporary methods for investment evaluation and justification, Real options. |
| 12 | Discussion on product development and process management. |
| 13 | Presentation of Project 1. |

| Week | Weekly Contents |
|------|----------------------------|
| 14 | Presentation of Project 2. |