**Content**

| Course Code | Course Name | Semester | Theory | Practice | Lab | Credit | ECTS |
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| PH106 | Logic II | 2 | 3 | 0 | 0 | 3 | 6 |

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| Prerequisites | |
| Admission Requirements | |

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| Language of Instruction | Turkish |
| Course Type | Compulsory |
| Course Level | Bachelor Degree |
| Objective | To provide an acquirement of the vocabulary and the concepts of the first order predicate logic |
| Content | Formal language PQ and formal system PFQ |
| References | Introduction to Logic II, Yalçın Koç ,Boğaziçi University Publications,1980.<br>Naive Set Theory, Paul Richard Halmos, D. Van Nostrand Company, Princeton, NJ, 1960.<br>Introduction to Mathematical Logic, Eliot Mendelson, D. Van Norstand Company, Princeton NJ, 1964<br>Sembolik Mantık, Tarık Necati Ilgıcıoğlu, Anadolu Üniversitesi Yayınları, Ankara 2013.<br>Introduction to Mathematical Logic, Church, A., Princeton University Press, Princeton NJ, 1956.<br>Introduction to Logic, Suppes, P., D. Van Norstrand Company, Princeton NJ, 1957.<br>Logique formelle et argumentation, Laurence Bouquiaux & Bruno Leclercq, De Boeck, Brüksel, 2009. |

**Theory Topics**

| Week | Weekly Contents |
|---|---|
| 1 | Formal language PQ : alphabet and grammar |
| 2 | Semantics of the formal language PQ: Set theory |
| 3 | Semantics of the formal language PQ: Partition and enumeration of a set, denumerable sequences. |
| 4 | Interpretation of the formal language PQ |
| 5 | Interpretation of a formula of the formal language PQ : Domain of interpretation, n-place relations and n-place functions |
| 6 | Semantical analysis of the grammatical formulas of the formal language PQ |
| 7 | Semantical implication and deduction meta-theorem for the formal language PQ |
| 8 | Mid-term |
| 9 | Formal system PFQ |
| 10 | Deduction and proof in the formal system PFQ |
| 11 | Syntactical implication for the formal system PFQ |
| 12 | Deduction meta-theorem for the formal system PFQ |
| 13 | Consistence meta-theorem for the formal system PFQ |
| 14 | Completeness meta-theorem for the formal system PFQ |