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|---|--------------------------|---|
| <b>Module title</b>   |                          | <b>Abbreviation</b>                         |
| Mathematical Logic  |                          | 10-I=ML-161-m01                             |
| <b>Module coordinator</b>   |                          | <b>Module offered by</b>                    |
| Dean of Studies Informatik (Computer Science)   |                          | Institute of Computer Science               |
| <b>ECTS</b>   | <b>Method of grading</b> | <b>Only after succ. compl. of module(s)</b> |
| 5   | numerical grade          | --  |
| <b>Duration</b>   | <b>Module level</b>      | <b>Other prerequisites</b>                  |
| 1 semester  | graduate                 | --  |
| <b>Contents</b>   |                          |   |
| Propositional logic, first-order predicate logic, proof and deduction, Gödel's completeness theorem, Tarski theorem, Gödel's incompleteness theorem, undecidability and nonaxiomatisability of elemental arithmetic.  |                          |   |
| <b>Intended learning outcomes</b>   |                          |   |
| The students possess a fundamental and applicable knowledge in the areas of propositional logic, first-order predicate logic, proof and deduction, Gödel's completeness theorem, Tarski theorem, Gödel's incompleteness theorem, undecidability and nonaxiomatisability of elemental arithmetic.  |                          |   |
| <b>Courses</b> (type, number of weekly contact hours, language – if other than German)  |                          |   |
| V (2) + Ü (2)   |                          |   |
| <b>Method of assessment</b> (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)  |                          |   |
| written examination (approx. 60 to 120 minutes).<br>If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).<br>Language of assessment: German and/or English<br>creditable for bonus  |                          |   |
| <b>Allocation of places</b>   |                          |   |
| --  |                          |   |
| <b>Additional information</b>   |                          |   |
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| <b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)  |                          |   |
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| <b>Module appears in</b>  |                          |   |
| Master's degree (1 major) Computer Science (2016)<br>Master's degree (1 major) Mathematics (2016)<br>Master's degree (1 major) Computational Mathematics (2016)<br>Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)<br>Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)<br>Master's degree (1 major) Computer Science (2017)<br>Master's degree (1 major) Computer Science (2018)<br>Master's degree (1 major) Computational Mathematics (2019)<br>Master's degree (1 major) Mathematics (2019)<br>Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020)<br>Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) |                          |   |