| Program | Level of studies | | First cycle | |
|---|---|---|---|---|
| | Program name | | **Educational physics** | |
| Course name | **MATHEMATICAL ANALYSIS FOR PHYSICISTS I** | | | |
| Course ID | Semester | Course status | ECTS | L+E |
| **POT1721** | **I** | **MANDATORY** | **7** | **3+3** |
| Lecturer | **Prof. dr. Nacima Memić** | | | |
| Aims and intended learning outcomes | Aim of the course is to develop the ability to deal with differential calculus.<br>The students will be able to:<br>-apply calculus in physics problems.<br>-use various convergence tests.<br>- describe the behaviour of differentiable functions. | | | |

Course content

1. Axioms of the set of real numbers
2. Mathematical induction- Rational and irrational numbers-
3. The nested intervals theorem-Accumulation point theorem
4. Sequences-Limits- Number e
5. Series and sums
6. Series with positive terms
7. Convergence criteria of series
8. Real functions-Limits
9. Continuous functions- Elementary functions
10. Notion of derivative- Basic rules-
11. Higher order differentials
12. Basic theorems on calculus
13. L'Hopital rule
14. Taylor Formula
15. Convex functions

| Student workload (hours) | | Grading | |
|---|---|---|---|
| | | Assessment method | Points |
| Lectures and Exercises | 90 | Tests during course | 50 |
| Exam preparation | 85 | Final exam | 50 |
| Total | 175 | Total | 100 |

Literature


1. V. A. Zorich, Mathematical analysis I, Universitext, Springer, Berlin, 2003.
2. I. Ljaško i dr., Zbirka zadataka iz matematičke analize, IBC '98, 2002.


Remarks