



Programme of Integrated course "Analisi Matematica A"

This course is composed of 2 Modules: 1) Analisi Matematica A mod. I, 2) Analisi Matematica A mod. II

Programme of Module "Analisi Matematica A mod. I"

- Code: DT0016
- Type of course unit: Compulsory (Bachelor Degree in Mathematics curriculum Generale)
- Level of course unit: Undergraduate Degrees
- Semester: 1

Number of ects credits: (Bachelor Degree in Mathematics) 6 (workload 150 hours)

Teachers: Cristina Pignotti (pignotti@univaq.it)

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| 1 | Course objectives | The aim of the course is to provide a knowledge of the differential calculus for functions of a real variable. |
| 2 | Course content and learning outcomes (dublin descriptors) | <p>Topics of the module include:</p> <ul style="list-style-type: none"> • The Real Numbers Systems • Numerical sequences • Functions of a real variable • Limits and continuity • Differential Calculus <p>On successful completion of this module, the student should :</p> <ul style="list-style-type: none"> • Have profound knowledge of the basic theory of differential calculus for functions of a real variable. Understand the fundamental concepts of the basic theory for functions of a real variable and their connections and be aware of potential applications in other fields. • Have knowledge and understanding of differential calculus for functions of a real variable. • Demonstrate skill in mathematical reasoning and ability to conceive a proof. • Understand and explain the meaning of complex statements using mathematical notation and language. • Demonstrate capacity for reading and understand other texts on related topics. |
| 3 | Course prerequisites | |
| 4 | Teaching methods and language | <p>Lectures and exercises</p> <p>Language: Italian</p> <p>Reference textbooks</p> <ul style="list-style-type: none"> • Giusti , <i>Analisi Matematica I</i>. Boringhieri ed. • Acerbi, Buttazzo, <i>Primo Corso di Analisi Matematica</i>. Pitagora ed. |
| 5 | Assessment methods | Written and Oral exam (Mathematical Analysis A) |

Programme of Module "Analisi Matematica A mod. II"

- Code: DT0017
- Type of course unit: Compulsory (Bachelor Degree in Mathematics curriculum Generale)
- Level of course unit: Undergraduate Degrees
- Semester: 1

Number of ects credits: (Bachelor Degree in Mathematics) 6 (workload 150 hours)

Teachers: Cristina Pignotti (pignotti@univaq.it), Bruno Rubino (bruno.rubino@univaq.it)

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| 1 | Course objectives | The aim of the course is to provide a knowledge of the integral calculus for functions of a real variable. |
| 2 | Course content and learning outcomes (dublin) | <p>Topics of the module include:</p> <ul style="list-style-type: none"> • Taylor polynomials • Integral calculus |

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| | descriptors) | <ul style="list-style-type: none"> • Numerical series • An outline of ordinary differential equations <p>On successful completion of this module, the student should :</p> <ul style="list-style-type: none"> • Have profound knowledge of the basic theory of integral calculus for functions of a real variable. Understand the fundamental concepts of the basic theory for functions of a real variable and their connections and be aware of potential applications in other fields. • Have knowledge and understanding of integral calculus for functions of a real variable. • Demonstrate skill in Mathematical reasoning and ability to conceive a proof. • Understand and explain the meaning of complex statements using Mathematical notation and language. • Demonstrate capacity for reading and understand other texts on related topics. |
| 3 | Course prerequisites | |
| 4 | Teaching methods and language | <p>Lectures and exercises</p> <p>Language: Italian</p> <p>Reference textbooks</p> <ul style="list-style-type: none"> • Giusti, <i>Analisi Matematica I</i>. Boringhieri ed. • Acerbi, Buttazzo, <i>Primo Corso di Analisi Matematica</i>. Pitagora ed. |
| 5 | Assessment methods | Written and Oral exam (Mathematical Analysis A) |