

COURSE OUTLINE

(1) GENERAL

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| SCHOOL | SCHOOL OF SCIENCES | | |
| ACADEMIC UNIT | DEPARTMENT OF MATHEMATICS | | |
| LEVEL OF STUDIES | UNDERGRADUATE PROGRAM | | |
| COURSE CODE | | SEMESTER | F |
| COURSE TITLE | GALOIS THEORY | | |
| INSTRUCTOR | | | |
| INDEPENDENT TEACHING ACTIVITIES | | WEEKLY TEACHING HOURS | CREDITS |
| | | 4 | 6 |
| COURSE TYPE | Special background | | |
| PREREQUISITE COURSES: | NO | | |
| LANGUAGE OF INSTRUCTION and EXAMINATIONS: | GREEK | | |
| IS THE COURSE OFFERED TO ERASMUS STUDENTS | YES | | |
| COURSE WEBSITE (URL) | http://www.math.aegean.gr/index.php/en/academics/undergraduate-programs | | |

(2) LEARNING OUTCOMES

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| Learning outcomes |
| <p>Understanding of the field extensions and the notion of algebraic and transcendental field extension. Ability of calculating the degree of an algebraic extension and the tower law. Algebraic approach of compass and ruler constructions. Examples. Normal, separable and simple extensions.</p> <p>Ability of calculating the Galois group. Fundamental theorem of Galois correspondence. Intermediate Fields. Examples. Solvable groups. Relationship between solvable gps and polynomials solved by radicals.</p> |
| General Competences |
| Working independently. Team work. Working in an interdisciplinary environment. |

(3) SYLLABUS

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| Rings, ideals, Euclidean domains, polynomial rings. Fields, field extensions, algebraic and transcendental extensions, constructions by ruler and compass. Normality and Separability, field automorphisms. Fundamental Theorem of Galois Theory, roots of unity, solution of equations by radicals, Fundamental Theorem of Algebra. | |
| TEACHING MATERIAL DISTRIBUTION | The teaching material of the course is uniformly distributed during the semester. |

(4) TEACHING and LEARNING METHODS - EVALUATION

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| DELIVERY | Face-to-face | |
| USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY | <ul style="list-style-type: none"> • Communication with students via e-mail • Course material is regularly uploaded to instructor's webpages | |
| TEACHING METHODS | Activity | Semester workload |
| | Lectures | 52 |
| | Independent study | 98 |

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| | Course total (25 per ECTS) | 150 |
| COURSE COMMITMENTS | Attending course is not obligatory. | |
| STUDENT PERFORMANCE EVALUATION | Student's evaluation is done in Greek through a written examination which includes short-answers questions, problem solving and written work. For students with disabilities, evaluation takes place via oral exams. | |

(5) ATTACHED BIBLIOGRAPHY

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| 1. Ian Stuart, Galois Theory, CRC Press. |
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