| MATH 156 – Calculus for Engineering II | | | | | | | | | |
|---|---|-------|----------|---------|-----------------------|----------|-------|---------|----------------|
| Department of Mathematics and Computer Sciences | | | | | | | | | |
| Methods of Instruction | Theor. | Appl. | Lab. | Intern. | Project/Field Work | Other | Total | Credit | ECTS Credit |
| | 42 | 28 | - | - | - | - | 70 | (3 2 4) | 7 |
| Semester | Spring 2008 | | | | | | | | |
| Instructor | Sezgin Sezer (A-Block, 107/A, Phone: +90 312 2844500 Ext: 307) Home Page: http://ari.cankaya.edu.tr/~sezgin e-mail: sezgin@cankaya.edu.tr | | | | | | | | |
| Schedule | Sec. 01 : Wed 13:40 – 15:30 B-312, Thu 14:40 – 15:30 B-313, Fri: 12:40-14:30 B-313 Sec. 03 : Mon 12:40 – 14:30 B-315, Tue 13:40 – 15:30 B-312, Wed: 12:40-13:30 B-317 | | | | | | | | |
| Office Hours | Monday 10:40 – 11:30, Tuesday 10:40 – 11:30, Thursday: 10:40 – 11:30 | | | | | | | | |
| Prerequisite | None | | | | | | | | |
| Catalog Description | Series; alternating series, power series, Taylor and Maclaurin series; vectors; lines and planes in space; vector valued functions; functions of several variables; partial derivatives, directional derivatives; extreme values; Lagrange multipliers; double integrals; polar coordinates; triple integrals; cylindrical and spherical coordinates; substitution; line integrals; vector fields; path independence; Green's theorem; surface integrals; Stoke's theorem, divergence theorem; complex numbers and functions; complex exponential, trigonometric, logarithmic function. | | | | | | | | |
| Textbook | Thomas' Calculus, Addison Wesley, 11 th International Edition. | | | | | | | | |
| Reference Books | Calculus Complete Course by Robert A. Adams Publisher: Addison – Wesley 1990. | | | | | | | | |
| Evaluation Criteria | | | | | | Number o | f | Perc | entages |
| | | Midt | erm Exan | ns | | 2 | 30+30 | | + 30 |
| | | | Quiz | | | - | | | |
| | | Но | omework | | | | | | |
| | |] | Project | | | | | | - |
| | | Term | Homewo | ork | | | | | |
| | | Labor | atory Wo | ork | | | | | - |
| | Class Participation - 5 | | | | | | | 5 | |
| | | Fir | nal Exam | | | 1 40 | | | 40 |

Exam Dates

First Midterm Exam: 20 March 2008

Second Midterm Exam: 24 April 2008

| Course Description Details | | | | | | | |
|----------------------------|-----------------|---|--|--|--|--|--|
| Week | Dates | Topics covered | | | | | |
| 1 | 11. 02 – 15. 02 | 11.2 Infinite Series,11.3 The Integral Test, | | | | | |
| 2 | 18.02 - 22.02 | 11.4 Comparison Tests,11.5 The Ratio and Root Tests, | | | | | |
| 3 | 25. 02 - 29. 02 | 11.6 Alternating Series, Absolute and Conditional Convergence, 11.7 Power Series, | | | | | |
| 4 | 03. 03 - 07. 03 | 11.8 Taylor and Maclaurin Series,11.9 Convergence of Taylor Series; Error Estimates,11.10 Applications of Power Series, | | | | | |
| 5 | 10. 03 – 14. 03 | 12.1 Three-Dimensional Coordinate Systems, 12.2 Vectors, 12.3 The Dot Product , 12.4 The Cross Product, 12.5 Lines and Planes in Space, 12.6 Cylinders and Quadric Surfaces, | | | | | |
| 6 | 17. 03 – 21. 03 | 13.1 Vector Functions, 14.1 Functions of Several Variables, 14.2 Limits and Continuity in Higher Dimensions, 14.3 Partial Derivatives, 14.4 The Chain Rule, | | | | | |
| 7 | 24. 03 – 28. 03 | 14.5 Directional Derivatives,14.6 Tangent Planes and Differentials,14.7 Extreme Values and Saddle Points,14.8 Lagrange Multipliers, | | | | | |
| 8 | 31. 03 - 04. 04 | 15.1 Double Integrals,15.2 Areas,15.3 Double Integrals in Polar Form,15.4 Triple Integrals in Rectangular Coordinates, | | | | | |
| 9 | 07.04 - 11.04 | 15.6 Triple Integrals in Cylindrical and Spherical Coordinates, 15.7 Substitutions in Multiple Integrals, | | | | | |
| 10 | 14. 04 – 18. 04 | 16.1 Line Integrals, 16.2 Vector Fields, Work, | | | | | |
| 11 | 21.04 - 25.04 | Review | | | | | |
| 12 | 28.04-02.05 | 16.3 Path Independence, Potential Functions, and Conservative Fields,16.4 Green's Theorem in the Plane, | | | | | |
| 13 | 05.05-09.05 | 16.5 Surface Area and Surface Integrals, 16.6 Parametrized Surfaces, | | | | | |
| 14 | 12. 05 – 16. 05 | 16.7 Stoke's Theorem, 16.8 Divergence Theorem | | | | | |