Department of Mathematics
Christopher Newport University

**Math 360** **Advanced Calculus**
**"Real Analysis"**

*Fall Term 2006*

**Instructor:** Dr. Khalili
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**Office:** Gosnold 121$= 11^2$
**Office Hours:** MW 3:00 - 4:00 pm, TTH 1:00-3:30 pm,
**Classroom:** Gosnold 204
**Class Hours:** MWF 10:00-10:50 am
**Phone:** 594-7037(office), 594-7194 (department secretary)

**Textbook:** **Analysis** *with an application to proof*, Steven R. Lay, Fourth Edition.

**Course Objective:** Math 360 is the second transitional course from caclculus. This course essentially covers some of the topics we have studied in calculus, however we prove most of the theorems here. The prerequisite for the course is Math 310. I expect that everybody is being familiar with basic mathematics logic, though I will cover those topics briefly. The overall objective of the course is to learn how to prove many rules and theorems we have encountered in calculus of one variable. Therefore our goal is that, by the end of the semester, everbody will be capable of constructing mathematical proofs independently.

**This course is also intended to achieve the following objectives**

1. Gaining factual knowledge (terminology, classifications, methods, trends)
2. Learning fundamental principles, generalizations, or theories
3. Learning to apply course material (to improve thinking, problem solving, and decisions)

**Course Outline:**

| Chapter | Section |
|---|---|
| 1 | 1,2,3,4 |
| 2 | 5,6,7 |
| 3 | 10,11,12,13 |
| 4 | 16,17,18,19 |
| 5 | 20,21,22,23 |
| 8 | 32,33,34 |
| 9 | 35,36 |

**Grading System:** The course grade is based on three tests, weekly homework (about 10 homework will be collected), and the final exam. Each of these activities account for 20% of the course grade. Final exam is scheduled for Monday December 4, from 11:00-1:30 pm in G-203. .

**Homework:** Homework will be assigned daily and covered in class the next day.

**Grading Scale:** The course grade is assinged based on the following scale:

| | | |
|---|---|---|
| 91 - 100 = A | 75 - 78 = $C^+$ | 58 - 60 = $D^-$ |
| 88 - 90 = $A^-$ | 70 - 74 = C | 00 - 57 = F |
| 85 - 87 = $B^+$ | 67 - 69 = $C^-$ | |
| 81 - 84 = B | 64 - 66 = $D^+$ | |
| 79 - 80 = $B^-$ | 61 - 63 = D | |

**Attendance:** Attendance is necessary, and you are responsible for all class materials, assignments and deadlines.

**Withdrawl Policy:** The withdrawl policy is the same as an official university policy. *Therefore the last day to withdraw or elect Pass/Fail is October 25, 2006.*

**University Regulations on Students with Disabilites:**
**If you believe that you have a disability, you should make an appointment to discuss your needs. In order to receive an accomodation, your disability must be on record in Disability Services located in the Academic Advising Center, Student Union, Room 3125 (Telephone - 594-8763; Fax - 594-8765).**

## Math 360 List of Homework
## Analysis with introduction to proof, Steven R. Lay

| Pages | Problems |
|---|---|
| 8 - 10 | 1.1,1.2,1.7,1.13. |
| 14 - 17 | 2.3,2.5,2.9,2.11,2.13,2.17. |
| 24-26 | 3.1,3.3,3.7,3.9. |
| 33 - 35 | 4.1,4.3,4.7,4.11,4.15,4.19,4.21,4.23. |
| 46 - 49 | 5.1,5.3,5.7,5.9,5.15,5.21,5.25,. |