SYLLABUS FOR MATH 3515 (Fall 2012)

*Introduction to Real Analysis*

**INSTRUCTOR:** Bert G. Wachsmuth  
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**CLASS MEETINGS**: MWF 11:00am – 12:15am in CH 80 (3rd Floor Corrigan Hall)

**OFFICE HOURS**: MW 12:30am – 1:30pm and by appointment  
 Office: Science Hall 118 D (formerly McNulty Hall)

**TEXT:** Online text at <http://www.mathcs.org/analysis/reals> (available for free).

In addition we *might* make use of a computer algebra system, either Maple or Wolfram Alpha, or maybe both. You should visit the CH Help Desk to obtain the latest version of Maple. Wolfram Alpha will be available for free through their web interface at <http://www.wolframalpha.com/>

**COURSE CATALOGUE DESCRIPTION:** Structure of R1 and Rn; compactness and connectedness;

continuity, differentiability and integrability in Rn. Prerequisites: MATH 2411 or 2511; MATH 2813. 4 credits

**PLAGIARISM & CHEATING*:*** Misrepresentation of someone else’s work as one’s own is a grave violation of academic ethics. This includes all graded assignments and examinations. Any material that is not your own work needs to be properly indicated and cited. This includes any work produced together with fellow students. You MUST indicate any sources of help outside of the course text(s) and your own work, including the names of students with whom you worked, internet resources or other sources of help. Failure to do so constitutes a violation of academic integrity (see below). When in doubt, cite or ask your instructor.

**STUDENTS WITH DISABILITIES:** It is the policy and practice of Seton Hall University to promote inclusive learning environments. If you have a documented disability you may be eligible for reasonable accommodations in compliance with University policy, the Americans with Disabilities Act, Section 504 of the Rehabilitation Act, and/or the New Jersey Law against Discrimination. Please note, students are not permitted to negotiate accommodations directly with professors. To request accommodations or assistance, please self-identify with the Office for Disability Support Services (DSS), Duffy Hall, Room 67 at the beginning of the semester. For more information or to register for services, contact DSS at (973) 313-6003 or by e-mail at [DSS@shu.edu](mailto:DSS@shu.edu). **Link to Disability Policy -** <http://www.shu.edu/offices/disability-support-services/faculty-syllabus-statement.cfm>

**GRADE:** The grade is determined by the following scores:

* Tests: 200 points
* Homework: 100 points

Please note that homework will be assigned, collected, and graded. I will drop the worst two homework scores automatically. There are no make-ups unless a student is seriously ill.

In addition, each student will need to present *at least one* homework problem. It is not graded, but the presentation is *mandatory*.

**OTHER NOTES:** It is expected that all work submitted by students is their own. Any type of plagiarism or cheating could result in a reduction in grade or formal disciplinary actions depending on the severity and the specific policy of the instructor.

**OVERVIEW:** This course deals with sets, sequences, series, continuity, differentiability, integrability (Riemann and Lebesgue), topology, power series, and more.

**Course material**:

We will cover the following topics (time permitting)

1. Sets and Relations

2. Infinity and Induction

3. Sequences of Numbers

4. Series of Numbers

5. Topology

6. Limits, Continuity, and Differentiation

7. The Integral (\*)

8. Sequences of Functions (\*)

Items with a star might be moved to the second semester of this course.