

Syllabus
UTK – M534 – Calculus of Variations
Spring 2014, Jochen Denzler, MWF 11:15–12:05, Ayres 121

Course contents: A blend of classical results and methods with modern ideas. The classical results will be treated with more mathematical rigor, since they require little technical prerequisites. Modern ideas like direct methods will be included conceptually, but skipping technical details that require prerequisites beyond this course. The conceptual analogies and key facts and purposes are however well within reach and form an equally important part of the blend.

Textbook: There is no textbook required, however if you want a book for reference, you may consider *Gelfand-Fomin: Calculus of Variations*, available below \$20 at Dover Publications. I expect the overlap with the lecture to be about 80%. — I will hand out my own notes (possibly handwritten, inasmuch as I don't get around typesetting them).

Exams: There will be two exams during the semester, and a comprehensive final during the official exam period. Exams will be part calculational, part conceptual (fact knowledge about definitions, theorems, key proof arguments, key examples and applications).

Total grade: 25% hwk and each exam.

Homework: Will be assigned on a flexible schedule, and in various forms. You may collaborate on homework, but should turn it in individually, because accomplished homework will become an integral part of your course notes. As a guide through the material, homework bears about equal weight with the lecture. It may occur that you find hwk less straightforward than I thought it would be (or at other times I may just have taken chances deliberately). We can discuss difficulties in class and you finish it up after the discussion. Deadlines will be made as flexible as needed to accomodate this style.

Office hours: MWF 2:30–3:30, TR 2-3. I am also available for drop-in or appointments. See my website <http://www.math.utk.edu/~denzler> for updates of office hours that may go into effect later depending on need. You may call me at my office phone (974-5325) or my cell phone: (604-7173)

My office is Ayres 317, my e-mail is denzler@math.utk.edu and there is a designated (public) course website linked from my website, namely: <http://www.math.utk.edu/~denzler/M534-Sp2014>