Klaus Waelde
Department of Economics
University of Wuerzburg

Intensive Course

Applied Intertemporal Optimization

July/August 2006

Time: 31/7/2006 – 4/08/2006
Venue: Abbey Frauenwoerth, D 83256 Frauenchiemsee
http://www.frauenwoerth.de/

Professor: Klaus Wälde
email: klaus.waelde@uni-wuerzburg.de

DESCRIPTION. The objective of this course is to provide a toolbox for solving maximization problems and for working with their solutions in economic models. Maximization problems can be formulated in discrete or continuous time, under certainty or uncertainty. Various maximization methods will be used, ranging from "solving by inserting", via Lagrangian and Hamiltonian approaches to dynamic programming (Bellman equation). Dynamic programming will be used for all environments, discrete, continuous, certain and uncertain, the Lagrangian for most of them. Solving by inserting is also very useful in discrete time setups. The Hamiltonian approach is used only for deterministic continuous time setups.

A full course would consist of Parts I to IV (see the table of contents available at www.waelde.com/aio): Part I deals with discrete time models under certainty, Part II covers continuous time models under certainty. Topics contained in the first two parts are assumed to have been covered in other courses before. Part III deals with discrete time models under uncertainty and Part IV, logically, analyzes continuous time models under

uncertainty. These two parts, **Part III and Part IV, will be covered in this course**. Some important methods like dynamic programming will first be reviewed in deterministic setups before using them in a stochastic environment.

ORGANIZATION. All participants arrive on Sunday, July 30 and leave on Friday, August 4 in the afternoon. Detailed information will be provided a.s.a.p.
The Course will consist of two lectures in the morning of every day in which new material will be introduced. In addition there will be daily problem sets for the afternoon. In late afternoon the problem sets will be discussed and one additional lecture will conclude the day. All students are asked to complete the required reading (part I and II) before the sessions so that we can move swiftly to the important issues of the material presented.

SCHEDULE. The daily schedule will be:

08.30 – 10.00: 1st lecture
10.00 – 10.30: Break
10.30 – 12.00: 2nd lecture
12.00 – 13.30: Break
13.30 – 15.45: Problem Sets
15.45 – 16.00: Break
16.00 – 16.45: Discussion of Problem Sets
16.45 – 17.00: Break
17.00 – 18.30: 3rd lecture

LITERATURE. The course is based on the (upcoming) book “Applied Intertemporal Optimization” written by the lecturer. The book is available as a draft at www.bgpe.de. Some familiarity with the usage of dynamic maximization methods in deterministic setups (see part I and II of the notes) is useful.