

Hampton, VA
Basic GAMS Class Introduction

Bruce A. McCarl

Specialist in Applied Optimization
Professor of Agricultural Economics, Texas A&M
Principal, McCarl and Associates

mccarl@tamu.edu
brucemccarl@suddenlink.net
agecon2.tamu.edu/people/faculty/mccarl-bruce/

979-693-5694
979-845-1706

Basic GAMS Class Introduction

Objectives and Method

A. Learning objectives

1. GAMS and GAMS use
 - a. Will start elementary but go fast
 - b. Backup provided by examples and documents
2. Firm Impact Analysis risk neutral and risk averse
3. Investment Analysis

B. Time is short -- Back up Course Materials

1. Reference materials on pdf backing up course
2. Notebook of Overheads
3. CDROM
 - a. All class examples
 - b. Reference Materials
 - c. Real Models

C. Mix of listening and doing hopefully about 60/40

Basic GAMS Class Introduction

Class materials – a guide to their structure

This class is supported by a number of reference documents and class examples.

The fundamental support documents are the **overheads** that are distributed in the notebook. The overall course outline also indicates the name of the overhead set that will be under use during each course segment.

The overheads refer to a number of other course support documents and class examples. These include **class examples**, **reference text materials**, and **class applications**.

Class examples Generally, the class examples appear under the subdirectory **example** and are then contained in the subdirectory that is consistent with the name of the overhead series we are working from. Thus, when working with the introductory material the overheads are called **gamintro** and the class example files are in the **example/gamintro** subdirectory. Generally I try to place filenames in **green** within the overheads.

Basic GAMS Class Introduction

Class materials – a guide to their structure

Reference text materials. Generally the reference text materials appear under the subdirectory **document**. In the class overheads references to these materials are colored in **purple**.

Class applications. During the class there will be references made several real applications. The files implementing these applications are generally kept in subdirectory name associated with the application. Again the filenames will be appearing in the overheads in **green**

Basic GAMS Class Introduction

Class materials – a guide to their structure

Overheads and Topics Covered

Overhead Set Name	Class Intro	Basic GAMS	Firm Analysis Modeling	Multiple Locations	GAMS for Applied Modeling	Improved Output / Spreadsheets	Firm Risk Modeling	Indivisible Investment modeling	Spreadsheets
Introduction	X								
Intro to GAMS		X							
Intro GAMS - pt2		X							
Model Inspection		X	X	X					
Power of GAMS		X	X						
GAMS User Guide		X			X	X			
Firm Impact			X		X				
Good Modeling		X			X				
Comparative Anal					X				
Conditionals		X			X				
Output improve		X	X		X				
Fixing Models		X	X		X				
Spreadsheet links									X
Multiloc				X		X			
Advanced Basis					X				
Firm Risk							X		
Handling Indivisibilities								X	
Integer								X	

Basic GAMS Class Introduction

Class materials – a guide to their structure

A list of part of the Reference Documents
and their Function

Reference Item Name	Class Intro	Basic GAMS	Firm Analysis Modeling	Multiple Locations	GAMS for Applied Modeling	Improved Output / Spreadsheets	CGE Modeling	Firm Risk Modeling	Indivisible Investment modeling
Outline	X								
Newbook.pdf		X		X	X	X		X	X
cgecoursenotes.htm, cgeingams.pdf		X			X		X		
erwinhomepage.htm		X			X	X			X
Fixmodel.pdf		X	X		X	X			
Rutherford.htm					X	X	X		
McCarl User Guide (through IDE)		X			X	X	X		X
tips		X			X				
usegck					X				
probab									X

Other documents can be gotten from GAMS web site
www.gams.com and www.gams.de

Basic GAMS Class Introduction

Class materials – a guide to their structure

CDROM Contents

Document subdirectory	All resource materials
Example subdirectory	All examples plus some other models. Generally accessed through IDE library
Yourwork subdirectory	Blank to start. Present to catch your work
Adobe subdirectory	Copy of Adobe PDF reader
Fixmodels subdirectory	Examples from fixmodel book that is in document directory
zipfile subdirectory	Installation files as follows
basgams.exe	contains all class files. Run this to install files without default write protection (which happens if you copy in the cd)
gamsadds.exe	contains all additions to GAMS system mainly documents for docs directory and inclib files like gnupltxy.
Root directory	contains setup.bat that installs self extracting archives, along with installation instructions and class license file

Basic GAMS Class Introduction

Course Schedule

Monday

8:15-8:30	Introduction A. Participant Introduction B. Class Introduction	
8:30-9:30	GAMS and the IDE	gamintro
9:30-10:15	Break and Hands on 1	
10:15-11:45	More basic GAMS Model Inspect/Document	gamint2 inspect
11:45-1:00	Lunch	
1:00-1:45	Hands on 2	
1:45-2:30	GAMS User Guide Power of GAMS	power
2:30-3:15	Hands on 3	
3:15-4:15	Firm Modeling	firmimp
4:15-5:00	Hands on 4	
5:00	Recess for day	

Basic GAMS Class Introduction

Course Schedule

Tuesday

8:30-9:30	Finish Firm Impact	firmimp
9:30-10:00	Good Modeling Practice	goodmodl
10:00-10:45	Hands on 5	
10:45-11:30	Firm Comparative Runs	compare
11:30-12:45	Lunch	
12:45-1:45	Conditionals	condition
1:45-2:45	Hands on 6	
2:45-3:45	Output Improvement	output
3:45-4:30	Hands on 7	
4:30-5:15	Advance Basis	basis
5:15	Recess for Day	

Basic GAMS Class Introduction

Course Schedule

Wednesday

8:00-9:00	Fixing Misbehaving Models	fixmod
9:00-9:40	Hands on 8	
9:40-10:30	Spreadsheet links	Spread
10:30-11:10	Hands on 9	
11:10-11:50	Multiple Locations - transportation	multiloc
11:50-1:00	Lunch	
1:00-1:45	Hands on 10 and break	
1:45-2:45	Firm Risk Modeling	firmrisk
2:45-3:30	Hands on 11 or 14 and break	
3:30-4:15	Solving NLPs	nlp
4:15-5:00	Hands on 15	

Basic GAMS Class Introduction Course Schedule

Thursday

8:15-9:00	Integer Programming	Indivis
9:00-9:45	Any hands on of your choice	
9:45-10:45	More integer programming	Integer
10:45-12:00	Wrapup and Open Discussion	Wrap-up
12:00	Workshop adjourns	