Intro and Software Requirements

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Welcome to Decision Analytics!

Before the first week of class, there are a few things that you need to complete:

1. Read the course **syllabus (https://umd.instructure.com/courses/1312774/files/63595423?wrap=1)** ↓ **(https://umd.instructure.com/courses/1312774/files/63595423/download?download_frd=1)** .
2. Purchase the course **textbook (https://www.wiley.com/en-us/Optimization+Modeling+with+Spreadsheets%2C+3rd+Edition-p-9781118937730)** .
3. Get ready with the required software (see below).

Software

An explicit goal of this course is to develop your ability to implement analytical techniques using contemporary computing technology. We will achieve this goal by utilizing Excel Solver (native Excel add-in) , SolverTable, IBM-CPLEX and @RISK (part of the Palisade Decision Tools Suite).

We will be using different pieces of software:

1. **Excel**: Available to all UMD students free of charge via Terpware.
2. **Solver** Add-In: An add-in from Frontline Systems that ships with Microsoft Office. Not to be confused with the SolverTable add-in. The Solver Add-In has to be “activated” via Options.
3. **SolverTable** Add-In: An add-in created by Prof. Chris Albright of Indiana University’s Kelley School of Business. Freeware. The SolverTable Add-In requires the Solver Add-In.
4. **@Risk (a component of DecisionTools)**: A set of add-ins from the Palisade Corporation including StatTools, PrecisionTree, etc. This software is supported on native Windows machines. **If you have a Mac**, you can try running the Palisade software in Windows under Bootcamp, Parallels, and VMWare, but if they don’t work

for you, **then neither the Smith IT help desk nor Palisade can provide any assistance**. The alternative is to use vSmith to access the software.

5. **IBM-CPLEX**: A commercial optimizer available for class via vSmith.

To install all four items in the correct sequence, please go through the following steps:

Step 1: Excel

Make sure you have an updated version of Excel. Ensure that Excel is set to allow macros to run.

Step 2: Solver

To verify that Solver is correctly loaded, start Excel and click on the Data tab. Under the Analysis group, click on Solver. If a window titled "Solver Parameters" opens up, then, Solver is correctly loaded. Close this window and go on to Step 3.

If you do not see Solver in the Analysis group (or do not see the Analysis group at all), then, you need to load Solver. To do this, click on File, then Options, then Add-Ins. Make sure the "Manage" window is set to Excel Add-ins, and then click Go. In the Add-Ins window that opens, if you see a box for "Solver Add-in", check that box. If you do not see a box for Solver, click Browse to search for the file *Solver.xlam*. On my laptop, it is in the folder C:\Program Files\ Microsoft Office\Office14\Library\Solver\. Double click on *Solver.xlam*. There should now be a checked box for Solver in the Add-ins window. Click OK. Return to the start of Step 2 to verify that Solver is correctly loaded.

Step 3: SolverTable

Please go to **http://www.kelley.iu.edu/albrightbooks/Free_downloads.htm (https://kelley.iu.edu/albrightbooks/Free_downloads.htm)** and download the zip file for the SolverTable for your version of Excel. Of the two files that will be downloaded, open the file "SolverTable Help.docx" and follow the instructions in this file for loading SolverTable.

To verify that SolverTable is correctly loaded, start Excel and click on the Add-Ins tab. You should be able to see a button for SolverTable.

Step 4: DecisionTools

DecisionTools can be installed in your personal Windows computer or accessed via vSmith (Smith Virtual Lab).

Information to install the software to your personal computer

The installers for DecisionTools will be available **DecisionTools (https://umd.instructure.com/courses/1312774/files/63741983?wrap=1)**

(https://umd.instructure.com/courses/1312774/files/63741983/download?download_frd=1) file. Read me (https://umd.instructure.com/courses/1312774/files/63741982?wrap=1) (https://umd.instructure.com/courses/1312774/files/63741982/download?download_frd=1) file about installation.

For any questions about Palisade software, please visit their website at http://www.palisade.com/academic/textbooks.asp (http://www.palisade.com/academic/textbooks.asp). Palisade Academic Sales can be contacted either via e-mail, academic@palisade.com (mailto:academic@palisade.com), or via phone at 800-432-RISK or 607-277-8000.

Information to access the software via vSmith

You need to access the vSmith site and use the Student Desktop. Here (Link (https://umdrhsmithlive.service-now.com/sp?id=vsmith)) you can find more detail instructions. Understanding how to save your work in vSmith (https://umdrhsmithlive.service-now.com/sp?id=vsmith_saving_data) is crucial. Make sure to seek help before hand so you don't lose your work!

Step 5: IBM-CPLEX

CPLEX is available via vSmith.

Meet the Instructor

Dr. Bardossy is a Professor in the Decision, Operations, Information and Technologies Department at the Robert H. Smith School of Business. She passionate about teaching statistics and quantitative methods for business decision-making.

In Fall 2018 Dr. Bardossy joined the department from the Merrick School of Business, University of Baltimore, where she taught business statistics and operations research to undergraduate and graduate students. She designed Business Analytics courses and played a key role in the development of a Data Analytics specialization for business students.

She is committed to student learning and teaching innovation. She is an active member of the Data, Analytics and Statistics Instruction group from the Decision Science Institute, and the Consortium for the Advancement of Undergraduate Statistics Education.

She earned her Ph.D. degree in Management Science from the Smith School of Business at the University of Maryland, College Park. Her research interest is in the application of decision science and the development of optimization methods to a variety of business issues. Most of her research involves linear programming, exact and approximate heuristics

issues. Most of her research involves linear programming, exact and approximate heuristics, network optimization, and simulation modeling. Her research has appeared in journals such as INFORMS Journal on Computing, Networks, and Discrete Applied Mathematics. She has served as a reviewer for journals such as Computers and Operations Research and European Journal of Operational Research.