

VERTICAL LEARNING CURVE

# Decision Analysis in Organizations (Quantitative Methods)

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Course Description & Introduction

May 22, 2008



# Decision Analysis in Organizations

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**THIS COURSE HAS SIGNIFICANT ADVANTAGES** over alternative methods for acquiring business knowledge, skills, and credentials. It has been carefully engineered by a team of qualified university professors and experienced business executives to meet the needs of busy working professionals who need maximum flexibility in a market-relevant, academically rigorous education. It is offered by a fully accredited university with a strong reputation for academic excellence and practical professional education. The university has a well-recognized track record in distance learning and a commitment to the kind of innovation that makes quality business education more affordable and accessible.

Major advantages to the course design are the Marketplace Interface (mentoring) and networking opportunities. In addition to the standard academic content, you will have the opportunity to learn from practicing professionals through required “mentoring” sessions. Using advanced technologies you will be engaged in an online community where you will network with other course participants around the world.

**THIS COURSE IS NOT FOR EVERYONE.** This course has little in common with classroom or traditional on-line courses with which you may be familiar. Like other forms of distance learning, it does place a significantly greater burden on the student to manage the study schedule and to master concepts, principles, practices, and tools. Self-discipline and time management are therefore essential to successful completion of this course. However, in this course your learning takes place in a **virtual reality** marketplace where you will develop your knowledge and skills “on the job.” You will be assigned to a department in a simulated (but very real) American company and will acquire and apply your skills as you interact with company executives, employees, customers, vendors and competitors. **Your preparation and performance will be continuously evaluated by company management and reported in real time to you and to the university course supervisor (see grading section below).**

**THE COURSE IS FOR UPPER DIVISION AND GRADUATE LEVELS.** This means that **you** are responsible for mastering the knowledge and skills required to certify your competency in this course. In some ways, this course will be **more** demanding and academically rigorous than a traditional classroom or on-line course. There are no lectures to attend. You will not “have a quiz at the end of the week.” You cannot hide in a classroom full of other students. Your professor will expect you to know the material and complete work assigned. **Even if a particular source the professor or company manager provides proves to be unavailable**, or if you lose internet access or power, you will be expected to find other sources. Just as on the job, there are no acceptable excuses for not completing an assignment on time or not being prepared for an impromptu question from your manager or professor.

**THIS COURSE IS DESIGNED TO WORK ON A HIGH-TECHNOLOGY PLATFORM.** Therefore, a well-equipped computer and basic computer skills are assumed. Access to “always-on” high speed internet (400 kbps or higher recommended) is essential. Your computer must be sound- and video-capable and able to open and

manipulate basic word-processing, spreadsheet, and presentation documents<sup>i</sup> (Word®, Excel®, PowerPoint®), PDF files, and to play Flash® videos (free reader and player downloads from Adobe™).

**THIS COURSE TAKES PLACE IN AN AMERICAN COMPANY** within the context of the American culture. The course setting is a simulated company, industry, and marketplace carefully modeled after a very real American firm. You will meet individuals with a variety of world views, educational backgrounds, races, religions, business ethics, values, and priorities; all of which are typical of what a trainee in such an American company could expect.

You will not be able to enroll in this course if you have not completed the Executive Orientation Course, available via the VLC site. Go to [www.VLCglobal.com](http://www.VLCglobal.com) to register for and complete the Executive Orientation course.

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## How This Course Is Graded

**Grading standards for this course are established by your university and may vary by professor of record. All grades are assigned by your university. Please note that no schedule or weights are contained within this document because your university sets these requirements.** As you progress through this course, your performance will be reported to you and the university in real-time (see your student “dashboard”) in the form of your total point score out of points possible (% score). The university may modify the grading standards or may add grading criteria (assignments or tests).

The percentage (%) scores reported to the university will include the following areas:

1. A variety of assignments given at any time during the course by the virtual professor, company executives, or university professor. Evaluated for (a) completion, (b) timeliness, (c) understanding.
2. **Un-announced assessments by a variety of tests or interviews.** Evaluated for (a) preparation and (b) correct understanding of principles or practices.
3. Active Participation evaluates student response to the opportunity to ask questions or make comments (a) in the company training context and (b) in the peer blog forum.
4. Active Participation in Mentoring Center Sessions. Evaluated for (a) attendance and (b) quality of contribution to discussions.
5. Periodic Competency Hurdles (within each module of each course).
6. Final Examination.

Note that this course is composed of the several Modules described in the Course Description. **You must demonstrate professional competency in each module before you will be allowed to continue to the next.** If you fail to demonstrate competency at the high levels required, you will be required to repeat the module. You are allowed three (3) attempts to pass each module, but changes occur

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<sup>i</sup> Free alternatives are available via <http://www.openoffice.org> and <http://www.google.com/google-d-s/b1.html>.

in the content along with a 20% penalty for each re-take attempt. Of course, having to repeat a module affects your performance rating, even if your performance is perfect the second or third attempt.

**Example:**

MODULE	POINTS POSSIBLE	1ST ATTEMPT SCORE (PASS ≥ 80%)	2ND ATTEMPT SCORE (PASS ≥ 85%)	3RD ATTEMPT SCORE (PASS ≥ 90%)	SCORE PENALTY (20%/FAILURE)	TOTAL MODULE SCORE
1	20	15/20 (fail)	18/20 (pass)	-	20%	18*.80 = 14.4
2	40	30/40 (fail)	31/40 (fail)	38/40 (pass)	40%	38*.60 = 22.8
3	25	23/25 (pass)	-	-	0%	23*1.00 = 23.0
<b>85</b>						<b>60.2</b>

*TOTAL RAW SCORE FOR THIS MODULE = 60.2 POINTS SCORED / 85 POINTS POSSIBLE = 70.8%. THIS RAW SCORE IS REPORTED TO YOUR UNIVERSITY, AND IS USED ALONG WITH OTHER DATA TO ASSIGN GRADES.*

**This software is designed to detect all forms of cheating.** All forms of cheating are taken seriously and any indications of cheating are reported immediately to the university. Penalties may be severe and may include being **permanently** expelled from the university resulting in a record that may prevent future admission to other accredited institutions. For more information, please see the [VLC policy on Academic Misconduct](#).

## Learning Methods

Each course modules employs pedagogical techniques of observation, application, practical guidance, and testing.

### Observation – see how

Each module introduces terms and concepts which are required to understand on-the-job functions and trainees are given the opportunity to see the practical utilization of these skill sets.

### Application – experience how

Each module presents scenarios and/or questions relevant to the terms and concepts and their association with the practical setting. The understanding of these situations will help to ensure that the trainee has gained an appreciation of the skill sets presented.

### Practical Guidance – get advice

Each module has opportunities to present additional information or aids to clarify terms and concepts, and to increase the learning capability and confidence of the trainee. This includes information regarding common questions/mistakes of application.

### Testing – confirm competence

Each module has a final competency hurdle that replicates, to the extent possible, the practical skills developed regarding the terms and concepts presented in the module. Generally, scenarios or case study conditions are introduced to measure performance which would be as close to an on-the-job situation as possible. This is designed as a required opportunity to display content mastery and confidence.

## Continuous Real-Time Student Course Assessment

On an unannounced and unscheduled basis, students are asked questions by the professor, the company department manager, the personal guide, the Human Resources department, and other students about various aspect of the learning experience. **University representatives have access to student data and summary reports in real-time, on-demand.**

## Course Description

This course is about how people and in particular managers imbedded in business organizations make decisions. The objective is to help managers make better decisions. The course is composed of two major sections. The first has to do with how decisions are made by individuals and in organizations. The second has to do with methods and technologies that can assist the manager in the decision processes. It is not the purpose of this course to cause the student to become a management science or operations management expert.

This course is delivered in a professor-supervised, self-directed, virtual-reality, on-the-job (OJT) context; this course relies on observation, explanation, application, mentoring, and testing to maximize professional competencies. The student learns from classic and contemporary readings, case studies, peers, and practicing managers.

## Knowledge/Skill Topics with Learning Objectives

### Module #1 – Introduction to the Course and the Learning Context

- Learn How to Use the Course Materials
- Learn the Course Contents and Approach
- Learn the Resources Available
- Pre-Test (note to producers: satisfactory score allows skip Module #9)
- Learn Why Good Decision-Making is in High Demand & Short Supply
- Learn Why Traditional Management Science Is Not An Optimal Solution (Reading)
- Competency Hurdle

### Module #2 – The Foundations of Decision Making

- Learn from Examples
- Learn Why Some Managers Avoid Making Decisions
- Learn Why Some Managers Make Poor Decisions
- Learn the Misconceptions About Decision Making
- Learn How Decision Making is Affected by World View and Values
- Learn to Manage the Roles of Fans and Shareholders
- Applying this Module to the Company Business
- Competency Hurdle

### Module #3 - Creatively Exploring Alternatives

- Learn Why How You See the Problem or Opportunity Limits the Alternatives
- Learn “Six Hats” Approach to Problem/Opportunity Analysis
- Learn to Apply “Reversal Approaches”
- Learn to Apply SCAMPER to Expand Your Portfolio
- Learn to Apply Matrix Analyses (BCG, GE)
- Learn to Apply Brainstorming, Random Input, Provocation
- Applying this Module to the Company Business
- Competency Hurdle

#### **Module #4 – Avoiding Decision Traps**

- Learn the Most Common Decision Traps
- Learn How Simple Rules & Tools Help Managers Avoid Traps
- Learn Pareto Analysis
- Learn Paired Comparison Analysis
- Learn Grid Analysis
- Learn Decision Tree Analysis
- Learn Force Field Analysis
- Learn Cost-Benefit Analysis
- Applying this Module to the Company Business
- Competency Hurdle

#### **Module #5 - Decision Making as a Science**

- Learn the “Science of Making Decisions”
- Learn the Limitations of the Scientific Method in Business Decisions
- Learn the Principles of Modeling
- Learn the Types of Models
- Applying this Module to the Company Business
- Competency Hurdle

#### **Module #6 - Structured Modeling**

- Learn the Practical Definition of Structured Modeling
- Learn How Structured Modeling Applies to Some Decisions
- Learn the Limitations of Modeling
- Applying this Module to the Company Business
- Competency Hurdle

#### **Module #7 - Spreadsheet in Decision Models**

- Learn Why Today’s Managers Need Serious Spreadsheet Skills (Reading)
- Learn to Apply MS Excel Spreadsheet Tools to Structured Modeling
- Applying this Module to the Company Business
- Competency Hurdle

#### **Module #8 – Deterministic Modeling (Optimization)**

- Learn the Principles of Max-Min
- Learn How Optimization Applies to Some Decisions
- Learn Some Types of Optimization Models
- Learn the Limitations of Optimization Models
- Applying this Module to the Company Business
- Competency Hurdle

#### **Module #9 – Linear Programming**

- Learn the Principles of Linear Programming
- Learn the Graphic Representation
- Learn the Algebraic Method
- Learn the Simplex Method and its Applications
- Applying this Module to the Company Business
- Competency Hurdle

## Module #10 – Queuing & Probabilistic Modeling (Uncertain Conditions)

Learn the Principles of Queuing  
Learn the Principles of Probabilistic Modeling  
Learning from Software Tutorials  
Applying this Module to the Company Business  
Competency Hurdle

## Module #11 – The Relationship between Making and Executing a Decision

Course Review and Practice Exam

## Readings, Resources, and References for This Course

Online Library -

<http://www.questia.com/Index.jsp>

The Free Management Library -

<http://www.managementhelp.org/>

MBA Library -

[http://www.businessbookmall.com/MBA%20Internet%20Library.htm#Free\\_MBA\\_Prerequisites\\_Books](http://www.businessbookmall.com/MBA%20Internet%20Library.htm#Free_MBA_Prerequisites_Books)

University online library

The Goal, A. Goldratt

Why Management Science Fails Business Managers

<http://ite.pubs.informs.org/Vol1No2/Grossman/Grossman.pdf>

Decision Science – online text for University of Texas

<http://www.utexas.edu/courses/bio301d/Table.of.contents.html>

Applied Management Science - Online Text for University of Baltimore

<http://home.ubalt.edu/ntsbarsh/Business-stat/opre/opre640.htm>

Integrating Spreadsheet Engineering in Management Science Courses, Grossman, Thomas

MS Excel Templates for Queuing Problems

<http://www.bus.ualberta.ca/aingolfsson/simulation/>

Mind Tools Decision Processes and Tools

[http://www.mindtools.com/pages/article/newTED\\_00.htm](http://www.mindtools.com/pages/article/newTED_00.htm)

Goldsim Software Demo

<http://www.goldsim.com/Content.asp?PageID=170>

Directory of Simulation Software on the Web

<http://dmoz.org/Science/Software/Simulation/>

List of Queuing Theory Software

<http://www2.uwindsor.ca/~hlynka/qsoft.html>

Free Queuing Toolpak

<http://www.bus.ualberta.ca/aingolfsson/QTP/>

Queuing Applications by Cisco

<http://www.cisco.com/warp/public/614/15.html>