

Maryland In Europe Graduate Programs
Bowie State University

Quantitative Methods for Decision Making
MGMT 585
April 1 – May 22
Kapaun Air Station
Tues/Thurs. (18:45 – 21:30)

Instructor: Dr. J.E.D. Riggs

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Consultation Hours: One-Half Hour before class, and by appointment.

Course Description: *Prerequisites: College algebra and either undergraduate statistics or the permission of the Program Director.* Acquaints students with the quantitative techniques commonly used in the decision-making process. Sample topics include concepts of decision making and decision analysis, linear programming, sensitivity analysis, transportation and assignments, problem forecasting and time series analysis, inventory concepts, PERT, and mathematical simulation.

Course Goals: Upon completion of this course, participants should have an understanding of:

1. The reasons for applying Quantitative decision making in the Public Sector.
2. Problems in modern decision systems.
3. Quantitative methods for data presentation.
4. Quantitative methods of data extraction.
5. The mathematical basis of forecasting theory.
6. Models for risk and payoff prediction.
7. Methods of problem assessment and categorization.
8. Alternative methods to traditional decision making systems.

Course Objectives: At the conclusion of this course, the student will be able to:

1. Analyze management policy for decision-making purposes.
2. Identify potential new problem areas.
3. Generate relevant statistical charts, graphs and models.
4. Interpret relevant statistical charts, graphs and models.
5. Examine data for cyclical trends.
6. Apply risk assessment models.
7. Create a PERT chart.
8. Manage inventory on a cyclical or non-cyclical basis.
9. Generate Waiting Line models.

10. Manage the process of product trans-shipment.
11. Apply linear programming models.
12. Determine utility factors relevant to policy success.
13. Distinguish between relevant and irrelevant sources of decision data.
14. Execute a multiple regression table, and analyze it.
15. Apply multicriteria (quantitative and qualitative) methods of decision-making.
16. Organize, present and explain decision systems to others more effectively.

Required Texts: Please note – some texts are used in multiple classes.

American Psychological Association (2001). *Publication Manual of the American Psychological Association*, 5th Edition. Washington DC: Author.

Anderson, D.R., Sweeney, D.J., & Williams, T.A. (2001). *Quantitative Methods for Business, 8th Edition, with Management Scientists, 3.0*. U.S.A.: Thompson Learning

Useful Website: <http://quant.swcollege.com>

Grading Information: Grades for the course will be assigned as follows:

A = 90% + C = 70% - 79%

B = 80% - 89% F = Below 70% [F(a)]; or regular non-attendance [F(n)].

Grades of “Incomplete” or “Withdrawal” are governed by Maryland in Europe policies. Please refer to UMUC Maryland in Europe Graduate Catalog, available in your local Education Center, or online at http://www.ed.umuc.edu/visit/pubs/catalog/grad_02-03.pdf, for further details.

Course Requirements:

There will be a mid-term and a final examination, as well as extensive in-class problem assignments. The mid-term exam will fall on the last class session of week four, and will consist of all readings and lectures to date. The final exam will fall on the last class session of week eight and will consist of all readings and lectures from the mid-term examination.

In addition, each student will be given in-class problems to solve, and will be expected to participate actively in these sessions.

The grading is as follows:

Mid-Term Examination: 40 %

Final Examination: 50%

Class Participation: 10%.

Course Schedule:

Session 1.	Complexity and Decision-Making	No Readings.
Session 2.	Same Topic.	No Readings.
Session 3.	Problem Formulation	Chapter 4.
Session 4.	Decision Making with Probabilities	Chapter 4.
Session 5.	Application of Utility	Chapter 5.
Session 6.	Utility vs. Value Approach	Chapter 5.
Session 7.	Forecasting	Chapter 6.
Session 8.	MID-TERM EXAMINATION	
Session 9.	Linear Programming	Chapter 7.
Session 10.	Same Topic	Chapter 8.
Session 11.	Transportation/Transshipment Problems	Chapter 10.
Session 12.	PERT/CPM Models.	Chapter 12.
Session 13.	Inventory Management: Ind. Demand	Chapter 13.
Session 14.	Inventory Management: Dep. Demand	Chapter 14.
Session 15.	Waiting Line Models/The Future.	Chapter 15.

ACADEMIC POLICIES:

Please refer to the UMUC Maryland in Europe Graduate Catalog, Available online at http://www.ed.umuc.edu/visit/pubs/catalog/grad_02-03.pdf or from your local Education Center, for information on the following:

Academic Integrity.
Course load.
Exceptions to policy.
Grade Appeal Process.
Make-up Exams.
Non-Discrimination Policy.
Students with disabilities.

Code of Civility:

To promote a positive, collegial atmosphere among student, faculty, and staff, Maryland in Europe has developed the following code of civility:

Respect.

Treat all students, faculty and staff with respect and in a professional and courteous manner at all times and in all communications, whether in person, written, or electronic (phone and e-mail).

Kindness.

Refrain from using profanities, insults, or other disparaging remarks.

Truth.

Endeavor to cite only the truth, and not knowingly misrepresent, mischaracterize or misquote information received from others.

Responsibility.

Take responsibility for our own actions instead of blaming others.

Cooperation.

Work together with other students, faculty, and staff in the spirit of cooperation toward our common goals of seeking and providing quality education.

Privacy.

Strive to uphold the right of privacy, and not talk about others.

Nondiscrimination.

Respect the differences in people, their opinions and ideas, and reject bigotry.

Instructor Information.

Dr. John Edwin Douglas Riggs is Collegiate Professor of Public Administration with the University of Maryland in Europe Graduate Programs/ Bowie State University. He has been living in Europe since 1985, and has been teaching in the Maryland system since 1992.