ATENEO DE MANILA UNIVERSITY
John Gokongwei School of Management

MINOR IN DECISION SCIENCE

DESCRIPTION:

The Decision Science Minor Program aims to provide students with tools for improving the quality of decisions and managing decision making at the level of the individual as well as the organization (group decision making). The approach will be multi-disciplinary, with topics taken from management science, psychology, philosophy, and political science. The courses offered under the program will provide students with the theoretical and methodological foundations for dealing with complex problems, i.e., defining the problem as well as generating, evaluating, and implementing solutions.

Five electives (at least C+ for each course) from the list below are required to complete the program.

COURSES:

- ***Decision Analysis (DEC 100)***

  The course introduces tools and techniques for the development of decision models. Topics to be covered include: decision constructs, multi-attribute decisions, handling risk/uncertainty, group decision making, conflict resolution and negotiating techniques

- ***Applied Modeling for Business Decisions (****Soft OR Techniques – under dev't.****)***

  The course will provide the tools for developing a more disciplined approach to management decision situations. This course takes the student through the modeling process: understanding the unstructured problem, developing verbal models of decision problems, translating verbal descriptions into formal (not necessarily quantitative) models.

- ***Introduction to Management Science (QMT 120, for non-ME majors)***

  The course seeks to develop basic competence in the use of management science and operations research techniques. Topics include: linear programming, goal programming, network optimization, dynamic programming. Cases and computer applications will be used intensively.

- ***Philosophy of Logic/Decision Making*** (***PH135 -*** *with PhiloDept)*

  This is a course designed to introduce the student to the basic ideas involved in correct deductive and inductive argumentation.

  It aims to develop skills of critical appraisal, so that the student will be able to find out what is wrong with an incorrect argument. It also supplies the student with the basic rules and methods for constructing correct arguments.

OR

- ***Psychology of Judgment/ Decision Making*** (*with Psychology Dept – under dev't)*

  The course will look into How decisions are actually made and how these processes differ from the best or optimal methods for decision making. The study of

the psychology of decision making and problem solving will provide insights on enhancing communication about decisions, decision processes, and decision support systems. Focus will be on assessing the individual and group processes that serve as barriers to effective decision making and approaches to overcoming these barriers.

- ***Statistics and Business Research (may be taken as MKT 111)***

The course will focus on the use of statistics for business research. Topics include: research design, hypotheses testing, multivariate methods. Cases and statistical software will be used to simulate actual business practice. A project involving a live application will be required for the course.

- ***Corporate Models and Decision Support Systems (DEC140)***

The course will enable the students to build computer models of business and financial systems, and simulate them using EXCEL add-in tools like @RISK and EVOLVER. The second part of the course will deal primarily with building models using systems dynamics, a technique popularized by Prof. Jay Forrester of the Massachusetts Institute of Technology. Systems dynamics allows the modeler to build more realistic models of business, financial and social environments using object modeling, and incorporating feedback systems into the model. The I-Think software will be used to build these dynamic models.

- ***Seminar in Problem Solving Techniques (MA195g1)***

The course seeks to foster a problem solving attitude and hone the student's critical thinking through the use of several well-known problem-solving techniques.

- ***Creative Problem Solving and Decision Making (LS138)***

The course introduces conceptual frameworks for systematic and logical thinking and new perspectives, to train the student to recognize patterns and structures, handle detail and dynamic complexity, master creative tension in the face of constraints, and generate alternatives (including out-of-the box solutions).

- ***Other Electives in Math or QMIT*** upon approval of program director

SUGGESTED COURSE SCHEDULE/SEQUENCE:			
Prerequisites: *Calculus and Statistics*	**Schedule of Courses**		
	Summer	**1st Semester**	**2nd Semester**
FOR M.E.: Ma 21/22, QMT 109	MA 195G.1	Ph 135 MKT 111 QMT 120 for non- ME LS 138	DEC 100 DEC 140 Ph 135 MKT 111 Soft OR Techniques Psychology of Decision-Making
For non-ME: Ma 19, QMT 11/12, EU 31, POM 104			