

**MASTER OF SCIENCE
COST ANALYSIS**

PROGRAM GUIDE

GCA 11M/12M/13M

I. Purpose

The Graduate School of Engineering and Management, Department of Systems and Engineering Management offers the Master of Science with major in Cost Analysis (GCA). The GCA program is designed to advance the knowledge and creative problem solving skills needed to effectively estimate program resources within the global military, U.S. Department of Defense (DOD) and the United States Air Force (USAF) environments. The curriculum integrates a strong foundation in quantitative concepts and techniques with specific military cost-related topics to prepare students to contribute effectively in a variety of complex and challenging roles in the global military arena. Besides the weapon system cost sequence, the curriculum includes courses in mathematical methods, quantitative decision-making, economics, cost management, risk, finance, econometrics, contract management, computer programming and maintenance and production management.

Program graduates are well grounded in course work related to follow-on assignments within the financial management field of cost estimating at the base, Major Command, and higher levels. The output Advanced Academic Degree (AAD) code is 1ASA (with primary output AFSC of 65WX) for the cost analysis specialty.

GCA Program Outcomes: (Students should be able to)

1. Effectively communicate using both oral and written communications.
2. Understand and apply concepts and techniques of descriptive and inferential statistics to analyze problems under conditions of risk and uncertainty.
3. Understand and apply the concepts, methods, and tools related to cost estimating in a program acquisition context.
4. Understand and apply concepts from a wide range of business disciplines within the specific context of DOD resource estimation.
5. Conduct and present methodical research to creatively solve complex and ambiguous problems and support resulting decisions with appropriate documentation.

II. Admission Standards

The general requirements for admission to the Master of Science in Cost Analysis program in the Department of Systems and Engineering Management are:

- Baccalaureate degree
- Cumulative undergraduate grade point average (GPA) of at least 3.0 on a 4.0 scale.
- Students should have completed courses in calculus up to (but not necessarily including) differential equations. Students also should have successfully completed at least one course in statistics. Their undergraduate GPA in mathematics-related courses should be at least 3.0 on a 4.0 scale.
- Graduate Record Examination (GRE) scores of at least 1100 (with a minimum of 500 verbal and 600 quantitative), or Graduate Management Admissions Test (GMAT) score of at least 550 (with a minimum of 28 verbal, 37 quantitative, and 4.5 analytical writing).

Students in the Wright-Patterson AFB area may register for individual courses as a part-time student (space available), but are expected to meet the above criteria prior to being granted candidacy for the degree. The Department of Systems and Engineering Management may grant waivers to the above requirements on an individual basis.

III. Curriculum Description

The GCA program is conducted in six academic quarters and a short-term (eighteen total months) for DoD sponsored, full-time students. The short term provides an orientation to curriculum options and a review of basic writing, acquisition, and mathematics.

The minimum curriculum satisfying the degree requirements consists of three analytical methods core classes, six cost specialty courses, a capstone course, and twelve hours of thesis research. The analytical methods core provides a thorough background in mathematical, statistical, regression, and research methods. The cost specialty area provides depth of study in broader aspects of cost estimating. Subject areas include advanced cost analysis, defense cost modeling, risk analysis, financial analysis, managerial economics, and cost management. The program culminates in an in-depth cost capstone course.

In addition to the minimum degree requirements described above, all DOD-sponsored full-time students must meet full-time registration requirements by completing additional courses to broaden their analytical and cost estimating studies. These classes include forecasting, contract management, research methods, maintenance and production management, quantitative decision making and decision analysis.

All students must complete an individual thesis. The thesis must address a real-world problem in the cost or resource estimating area. Principal purposes of the thesis are to exhibit the student's ability to integrate concepts and techniques acquired through course work and demonstrate independent scholarly pursuit of a research question. Typically, thesis topics are provided by government agencies interested in sponsoring student research in areas of practical concern. Students must comply with the requirements set forth in Standards for Theses within the Graduate Cost Analysis Program.

In addition to the above requirements, all full-time students must complete an average of twelve credit hours of study per quarter over the six quarters in residence.

IV. Course Sequence

Cost Analysis Class 11M, 12M, 13M

(Six-quarter program for full-time students, example for 11M)

FALL 09

STAT 525	Applied Statistics for Managers I	4 *
FMGT 510	Finance Theory I	4 *
SMGT 543	Systems Acquisition Management	3
ECON 520	Managerial Economics	4 *
(may substitute WSU MBA 520 Survey of Economics for ECON 520)		

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WINTER 10

STAT 535	Applied Statistics for Managers II	4 *
COST 669	Advanced Cost Analysis	4 *
RSCH 630	Research Methods	3
ECON 580	Fundamental Methods of Mathematical Economics	4 *
(may substitute WSU EC 715 Applied Microeconomics for ECON 580)		

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SPRING 10

COST 671	Defense Cost Modeling	4 *
LOGM 569	Maintenance and Production Management	3
CMGT 523	Contracting and Acquisition Management	3

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SUMMER 10

IMGT 669	Business Process Reengineering	3
COST 799	Thesis Research	4 *
FANL 520	Strategic Financial Analysis	3
(may substitute WSU EC 730 Regional Economics for FANL 520)		

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FALL 10

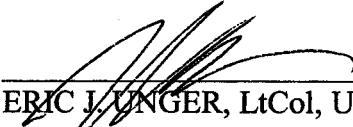
COST 674	Seminar in Cost Analysis	4 *
LOGM 630	Forecasting Management	3
COST 799	Thesis Research	4 *
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WINTER 11

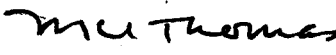
QMGT 680	Project Risk Analysis	4 *
OPER 543	Decision Analysis	3
COST 799	Thesis Research	4 *
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* These classes are part of the 48-hour degree requirement

(Total = 72)

 18 Aug 09
ERIC J. UNGER, LtCol, USAF
Assistant Professor
GCA Curriculum Chair

 19 Aug 09
ADEDEJI B. BADIRU, Professor
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