

A FLEXIBLE PROGRAM

The MSQA Distance Learning Program allows students to complete ALL of their course work online at their location.



An AFFORDABLE PROGRAM

All distance learning students pay the same low tuition and fees, regardless of their location. Whether in Atlanta, San Francisco or Bangalore, MSQA online students pay \$216 per credit hour and a once-per-semester technology fee of \$75.

See www.msqa.edu/fees.html for the latest information.

MASTER OF SCIENCE IN QUALITY ASSURANCE


For practicing professionals in quality assurance and those who aspire to the field, two concentrations are offered:

**Quality Engineering & Technology
Quality Systems**

GRADUATE GREEN BELT CERTIFICATE

For individuals who are looking to formalize their knowledge of quality concepts, without the commitment of a full Masters degree.




The MSQA Distance Learning Program
Southern Polytechnic State University
1100 South Marietta Parkway
Marietta, Georgia 30060-2855
www.msqa.edu/online

Master of Science in Quality Assurance



Southern Polytechnic
Georgia's Technology University

MSQA Distance Learning Program

Through distance learning, students can complete ALL of their course work for the M.S. in Quality Assurance (or the Graduate Green Belt Certificate) online at their location. The online MSQA is the first program of its kind offered in the state of Georgia, and one of only a handful of graduate programs in Quality in the country, allowing professionals from all over the world to benefit from distance learning.



Our Students

The typical MSQA student has 12 years of experience in the quality field. With their MSQA degrees, our students have gone on to further their careers as Quality Engineers, Managers and Directors.



Courses are taught using WebCT, a distance learning platform that provides a virtual classroom environment complete with lecture modules, live voice and text chat, discussions, email, quizzes, and assignments. Students interact extensively with each other and the professor using the WebCT environment during the 16-week semester. The PhD level professors use the same course materials for their online classes as they do in their on-campus classes.



Employers of Southern Polytechnic's MSQA graduates include

BellSouth
Boeing
Ciba-Vision
Dell Computer
Delta Air Lines
GE Healthcare
Johnson and Johnson
Lockheed-Martin Aerospace
Panasonic
U.S. Department of Agriculture
U.S. Red Cross

For more information please contact
Dr. Mary McShane Vaughn
Graduate Program Coordinator
678-915-7243 or gradinfo@spsu.edu
Visit us on the web at
www.msqa.edu/online

AT A GLANCE

GENERAL

Located in metro Atlanta
Diverse student body — 39% minority, 16% international
Private school atmosphere at public school prices

ACCREDITATION

The Commission on Colleges of the Southern Association of Colleges and Schools (SACS)

*The Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET)

*The National Architectural Accreditation Board (NAAB)

*The American Council for Construction Education (ACCE)

*The Association of Collegiate Business Schools and Programs (ACBSP)

*The University Catalog identifies specific programs that hold these accreditations.

GRADUATE DEGREE PROGRAMS

Computer Science

Construction

Electrical Engineering Technology

Information Technology

MBA

Quality Assurance

Software Engineering

Systems Engineering

Technical and Professional Communication

Graduate Certificate Programs:

Computer Science Transition

Quality Assurance

Software Engineering

Systems Engineering

Technical and Professional Communication

FACULTY

Experienced, dedicated professors

A teaching institution — teaching is the number one criterion for promotion and tenure

Small classes — 25-30 in a classroom, more individual attention

GRADUATES

Essentially 100% placement

Graduates are well-paid

Immediately productive

HOUSING

Residence halls and apartment housing available on campus — both completely wired for computers

Affordable apartments are readily available in nearby Marietta area, many within walking distance

COSTS

Our tuition costs are competitive; please refer to our website at www.msqa.edu/fees.html for the most current information.

FINANCIAL AID

Cooperative education and graduate assistantship opportunities and traditional forms of financial aid are available

Scholarships are available, related to your major, academic excellence or need

For more information, contact the Office of Financial Aid at 678-915-7290



Southern Polytechnic State University is an equal opportunity educational institution which does not discriminate on the basis of race, sex, age, religion, national origin or disability.

Customize Your Education

The **MSQA DEGREE** offers two options of study, allowing you the flexibility to tailor your education to meet your professional needs. The Quality Engineering and Technology Concentration focuses on the technical aspects of quality. The Quality Systems Concentration, on the other hand, is designed for those who hold a non-technical degree but who work, or desire to work, in a quality-related field. Students also can tailor their program to help prepare for ASQ certification exams such as Certified Quality Manager (CQM), Certified Quality Engineer (CQE), and Six Sigma Black Belt (CSSBB).

The Quality Engineering and Technology Concentration

This concentration emphasizes the technical aspects of the field and is designed for those who have undergraduate degrees in engineering technology, physical science, mathematics, and other technical majors, and have two years of full-time experience in the field. The Quality Engineering & Technology Concentration focuses on total quality and on statistical process control, designed experiments, systems design and reliability.

QA Course Descriptions

QA5000 Statistical Concepts for Quality Assurance

Students will learn basic statistical concepts including exploratory data analysis, probability distributions, confidence intervals and hypothesis tests. Analysis using Excel and Minitab will be introduced.

QA 6600 Methods of Analysis 3-0-3

A study of the analytic processes required to identify, document, define, and measure requirements and limitations for any operating system. Class work will focus on identifying, describing, and measuring existing manufacturing and service systems. Methods available for system improvement will be investigated.

QA 6602 Total Quality 3-0-3

A study of the functions and responsibilities of the quality organization. TQM concepts, quality function deployment, and the tools for continuous improvement are analyzed for sequence of use and application. Emphasis is placed on design and performance aspects of a system wide quality assurance function.

QA 6610 Statistics for Quality Assurance 3-0-3

Descriptive statistics for discrete and continuous variables, probability concepts, probability distributions including normal, binomial, hypergeometric and Poisson, confidence intervals and hypothesis testing, analysis of variance, and regression and correlation analysis.

QA 6611 Statistical Process Control 3-0-3

The study of the theory and application of statistical process control techniques including DPMO calculations, X-bar and R/S charts, P and nP charts, C and U charts, as well as CuSum and EWMA charts. Process capability and gauge repeatability and reproducibility are covered in depth. A prior course in statistics, such as Math 260 or QA 6610 is required.

QA 6612 Design of Experiments 3-0-3

The theory and application of statistically designed experiments to include comparative experiments, full factorial and fractional factorial designs, Latin square and mixture experiments. Blocking and confounding will be covered, as well as de-aliasing strategies. Response surface methodology is introduced along with robust design of experiments including a discussion of Taguchi's contribution. QA 6611 is the prerequisite for this course.

QA 6613 Linear Regression Analysis 3-0-3

In this course, students will learn linear regression analysis techniques to include first order and polynomial modeling, use of indicator variables, variance stabilizing transformations, multi-collinearity diagnostics and residual analysis. The connections among ANOVA, design of experiments and regression will be emphasized. Statistical software will be used to analyze problems. A prior course in statistics, such as Math 260 or QA 6610 is required.

QA 6615 Applied Systems Reliability 3-0-3

Analysis of appropriate probabilistic models for system reliability, including the exponential, Weibull, normal, and lognormal distributions, life prediction techniques, reliability test program plans, failure mode and effect analysis, Markov models, and maintainability concepts. QA 6613 is the prerequisite for this course.

QA 6620 Inspection Systems Design 3-0-3

Understanding inspection systems, measurement principles, and limitations. Included are acceptance sampling plans such as ANSI Z1.4, ANSI Z1.9, Dodge Romig, and stipulated risk, chain, sequential, and continuous plans. QA 6610 is a prerequisite for this course.

QA 6630 Technical Training Methods 3-0-3

Adult learning theory, the development and management of training programs, presentation techniques, instructional aids, and assessment will be investigated.

QA 6640 Quality Cost and Supplier Evaluation 3-0-3

A detailed analysis of cost reductions involved in continuous improvement. Supplier evaluation, including quality audits, is reviewed to establish capability. The concept of partnerships is explored. QA 6602 is a prerequisite for this course.

QA 6650 Quality Systems Design 3-0-3

The development of the quality organization, systems, and procedures necessary for effective participation in world markets. Creating and documenting methods and procedures is stressed. QA 6602 is the prerequisite for this course.

QA 6660 Six Sigma Black Belt Concepts 3-0-3

Students will study topics in quality that encompass the body of knowledge for Six Sigma Black Belts. The student's understanding will be reinforced through test questions that are representative of the Black Belt certification test. Students will be academically prepared to sit for the ASQ Black Belt certification exam following this course. The exam also requires completion of a Six Sigma project, which can be completed in QA 7503. QA 6650, QA 6611, QA 6612 and QA 6613 are pre-or co-requisites for this class.

QA 6712 Quality Systems Simulation (available only on campus) 3-0-3

The application of simulation to quality systems. Topics covered included fundamental simulation modeling techniques, random sampling procedures and methods of estimating performance measures from simulation outputs. Emphasis will be upon hands on simulation of various quality systems using PC based simulation languages. QA 6611 is the prerequisite for this course.

The Quality Systems Concentration

The Quality Systems Concentration is designed for anyone working in the quality, training and related developmental disciplines and emphasizes the managerial aspects of the field by focusing on total quality management and analytical techniques. A primary objective of the degree is to provide graduate level study to individuals who are currently practicing in a quality related field, but who have not had any formal technical education in the discipline.

Graduate Green Belt Certificate in Quality

To complement the advanced degree offerings at Southern Poly, SPSU offers a 4-course Graduate Green Belt Certificate. The primary goal of the Graduate Green Belt Certificate is to give practitioners with a bachelor's degree and two years of relevant work experience the opportunity to learn at a Green Belt level the methods of analysis necessary to attain what is known as Six Sigma Quality. Students learn to define, measure, analyze, improve and control processes within their organization, maximizing business success and growth while increasing customer satisfaction.

QA 6722 Human Factors in Quality Assurance (available only on campus) 3-0-3

A comprehensive survey of human factors theory, research, and applications which are of particular relevance to quality assurance. Emphasis will be placed on operator constraints in the design of work processes, workplaces, and instrumentation. QA 6600 or QA 6602 are prerequisites for this course.

QA 6763 Software Quality 3-0-3

The Personal Software Process (PSP) is a technology that brings discipline to the practices of individual software engineers, dramatically improving the quality, predictability, and cycle time for software-intensive systems. PSP makes engineers aware of the processes they use to do their work, and the performance of those processes. The course covers quality assessment, cost estimation, configuration management, software performance measures, proof of correctness, validation and verification, and management of the quality environment for software.

QA 6901-6903 Special Topics in Quality (variable credit 1-3 hours)

Under special circumstances, students may arrange to study and perform independent research on a topic approved by a graduate faculty member. An appropriate research paper will be required and the student may be required to make an oral presentation to faculty, graduate students, and/or quality professionals.

QA 7403 Graduate Seminar 3-0-3

The course is designed to cover various topics within the field of quality assurance which are not taught in other courses. These topics might include bootstrapping methods, risk analysis, SPC training methods, and others. Students are expected complete a technical semester project. Prerequisites for this course are QA 6602 and QA 6611, or consent of the instructor.

QA 7503 Research In Quality (Available only for students completing MSQA online) 3-0-3

This course is designed to guide the student in a thorough and in-depth written examination of one or more topics relevant to the application of quality assurance. Emphasis is placed upon students using both traditional and electronic means to perform the research. Prerequisites for this course are QA 6602 and QA 6611 or consent of the instructor. Special Note: This course requires two on-campus meetings, occurring on Saturdays in March and October.

QA 7603 Applications in Quality (available only on campus) 3-0-3

This course is designed to guide the students through a thorough and in-depth application of quality principles in the workplace environment. Emphasis will be on the application of the principles and measurable outcomes.

MSQA Quality Engineering & Technology Concentration Curriculum

REQUIRED Courses		
Total of 24 credit hours		
NUMBER	COURSE TITLE	HOURS
QA 6602	Total Quality	3
QA 6610	Statistics for Quality Assurance	3
QA 6611	Statistical Process Control	3
QA 6612	Design of Experiments	3
QA 6613	Linear Regression Analysis	3
QA 6615	Applied Systems Reliability	3
QA 6650	Quality Systems Design	3
QA 6660	Six Sigma Concepts	3
Required Courses 24 credit hours		

ELECTIVE Courses		
Two are needed; prerequisites must be satisfied		
NUMBER	COURSE TITLE	HOURS
QA 6600	Methods of Analysis	3
QA 6620	Inspection System Design	3
QA 6630	Technical Training Methods	3
QA 6640	Quality Cost & Supplier Evaluation	3
QA 6712	Quality Systems Simulation	3
QA 6722	Human Factors in Quality	3
QA 6763	Software Quality	3
QA 6901-6903	Special Topics in Quality	3
Elective Courses 6 credit hours*		

ONE Research/Project course will be completed for Graduation		
NUMBER	COURSE TITLE	HOURS
QA 7403	Graduate Seminar	3
QA 7503	Research in Quality**	3
QA 7603	Applications in Quality (On campus only)	3
Research/Project 3 credit hours		

Total Credits Required for Graduation 33 credit hours

MSQA Quality Systems Concentration Curriculum

REQUIRED Courses		
Total of 24 credit hours		
NUMBER	COURSE TITLE	HOURS
QA 6600	Methods of Analysis	3
QA 6602	Total Quality	3
QA 6610	Statistics for Quality Assurance	3
QA 6611	Statistical Process Control	3
QA 6613	Linear Regression Analysis	3
QA 6630	Technical Training Methods	3
QA 6640	Quality Cost & Supplier Evaluation	3
QA 6650	Quality Systems Design	3
Required Courses 24 credit hours		

ELECTIVE Courses		
Two are needed; prerequisites must be satisfied		
NUMBER	COURSE TITLE	HOURS
QA 6612	Design of Experiments	3
QA 6615	Applied Systems Reliability	3
QA 6620	Inspection System Design	3
QA 6660	Six Sigma Concepts	3
QA 6712	Quality Systems Simulation	3
QA 6722	Human Factors in Quality	3
QA 6763	Software Quality	3
QA 6901-6903	Special Topics in Quality	3
Elective Courses 6 credit hours*		

ONE Research/Project course will be completed for Graduation		
NUMBER	COURSE TITLE	HOURS
QA 7403	Graduate Seminar	3
QA 7503**	Research in Quality	3
QA 7603	Applications in Quality (On campus only)	3
Research/Project 3 credit hours		

Total Credits Required for Graduation 33 credit hours

Graduate Green Belt Certificate Required Courses		
NUMBER	COURSE TITLE	HOURS
QA 6602	Total Quality	3
QA 6610	Statistics for Quality Assurance	3
QA 6611	Statistical Process Control	3
QA 6650	Quality Systems Design	3