

QUALITY ASSURANCE**SQC 200/201****Orientation (1)**

Guest speakers discuss issues quality assurance professionals encounter. Student contact with industry is established through field trips.

1 Class Hour

SQC 111**Acceptance Sampling Techniques (3)**

A thorough study of acceptance sampling techniques for attributes and variables. Operating Characteristic curves, lot-by-lot acceptance plans based on LTPD, AOQL and AQL. Dodge-Romig, MIL-STD 105D, sequential probability ratio test (SPRT), sequential sampling, continuous sampling, MIL-STD 414.

3 Class Hours; Prerequisite: MAT 124 Statistics I.

SQC 112**Metrology (3)**

The study of the science of measurement. This course will deal with the principles and practice of precision measurement. Topics to include fixed gages, micrometers, verniers, thread gaging, comparison measurement, optical measuring instruments, calibration and angle measurement.

3 Class Hours; Prerequisite: MAT 124 Statistics I or MAT 136 College Algebra and Trigonometry.

SQC 113**Statistical Process Control (3)**

A thorough study of process capability analysis and control chart procedures. Capability Indices, control charts for attributes, p, np, c, u, d. Short-run control charts. Control charts for variables \bar{x} , R, S. Distinctions made between process capability and process control.

3 Class Hours; Prerequisite: MAT 124 Statistics I.

SQC 220**Senior Practicum (3)**

This course is designed to allow students to integrate their theoretical knowledge with real world situations. Working in teams, students are assigned to case studies involving actual or fictitious data. The course emphasizes computer usage, classroom presentations, and written reports. ISO 9000 Standards and problem solving techniques including Pareto diagrams, process flowcharts, check sheets, brainstorming, cause-and-effect diagrams, and multi-voting schemes are discussed.

3 Class Hours; Prerequisites: SQC 111 Acceptance Sampling Techniques, SQC 112 Metrology, SQC 113 Statistical Process Control, MAT 224 Statistics II, MAT 245 Statistics III; Corequisite: SQC 244 Reliability and Life Testing.

SQC 244**Reliability and Life Testing (3)**

Fundamentals of probability, probability distributions, discrete distributions: binomial, hypergeometric, Poisson, Pascal, continuous distributions: normal, exponential, gamma, log-normal, Weibull. Introduction to reliability, failure rate, MTBF, MTTF, mean life, probability of survival for series systems and parallel redundant systems, basics of life testing based on preassigned number of failures and preassigned time, SPRT, maintainability, availability, and MTTR.

3 Class Hours; Prerequisite: MAT 124 Statistics I.

SQC 297**Cooperative Work Experience (1-3)**

Cooperative education in Quality Assurance may be available. On-the-job experience may be obtained in an industrial setting whose operations require process control, statistical analysis, problem solving skills, or other tools of Quality Assurance. To be eligible, a student must maintain a cumulative grade point average of at least 2.5 with a minimum of 3.0 in MAT and SQC courses, have no "F" grades, and exhibit responsibility through SQC 100/200 orientation.

Prerequisite: Placement by advisor.