

Southeast Missouri State University

Department of	<u>Industrial and Engineering Technology</u>	Course No.	<u>IM 691</u>
Title of Course:	<u>Methods of Research in Technology Management</u>	Revision	<u> </u>
		New	<u> </u>

I. Catalog Description and Credit Hours of Course:

This course will cover fundamental issues in planning, conducting, and evaluating research in technology management area. It will include concepts such as identification of research problems, effective research design, data collection and analysis using quantitative and qualitative techniques, and techniques for evaluation research results. (3 credit hours)

II. Prerequisite (s): Graduate standing with minimum 9 credit hours completed.

III. Purposes or Objectives of the Course:

- A. Understand the need for research in the field of technology management.
- B. Define practical research questions and hypotheses.
- C. Review and analyze appropriate literature.
- D. Understand and utilize applicable sampling techniques.
- E. Design and conduct necessary research experiments.
- F. Collect, summarize, and analyze data using quantitative and qualitative techniques including statistical analysis tools.
- G. Write scholarly report to present research details and results.

IV. Student Learning Outcomes:

- A. Students will be able to apply critical thinking to diverse situations in the work environment.
- B. Students will be able to effectively conduct a review of literature.
- C. Students will be able to properly document research.

V. Expectations of Students:

- A. Students are expected to:
 - 1. Complete all class projects and assignments in a timely and professional manner.
 - 2. Use professionalism when dealing with faculty, staff and students.
 - 3. Attend classes and participate in discussions.
 - 4. Satisfactorily pass test, conduct research, and read assigned materials.
 - 5. Be responsible for all lecture notes, homework assignments, quizzes, tests, and other activities related to course content.

VI. Course Content or Outline: (*4 contact hours per week*)

- A. Introduction to need for research in technology management (3 hours)
 - Definition and importance of research in technology management
 - Ethical issues and skills needed to design and conduct research
- B. Identification and selection of a research problem (3 hours)
- C. Specifying purpose, questions, hypotheses, assumptions, and limitations (3 hours)

- D. Review and analysis of literature to evaluate current technology and information (9 hours)
- E. Sampling techniques (3 hours)
 - Random sampling, purposeful sampling, etc.
 - Sample size and number of research sites
- F. Research designs (6 hours)
 - Experimental design, correlational designs, survey designs, etc.
- G. Data collection and analysis using quantitative and qualitative techniques (12 hours)
 - Quantitative and qualitative data collection
 - Statistical analysis tools such as t-test and chi-square tests
- H. Scholarly report writing and evaluation of research results (6 hours)

Total Hours 45

VII. Textbook(s) and/or Other Required Materials or Equipment:

- A. “Educational Research: Planning, Conducting, and evaluating Quantitative and Qualitative Research” by John W. Creswell, 4th edition, Copyright 2011 (ISBN 978-0131367395, publisher: Addison Wesley).

VIII. Basis for Student Evaluations

- A. Grading will consist of the following criteria and percentages.

Homework and quizzes	20%
Evaluate and critique other students’ reports.....	10%
Research reports	70%
<i>(Chapter 1: 15%, Chapter 2: 15%, Chapter 3: 20%, Chapter 4: 20%)</i>	

The content of the chapters will be as follows:

- Chapter 1: Introduction and Statement of the Problem
- Chapter 2: Review of Related Literature
- Chapter 3: Research Methodology (includes data collection)
- Chapter 4: Analysis, Results, and Conclusions

The instructor reserves the right, acting within the policies and procedures of the university, to make changes in both the course content and basis for student evaluation without notice or obligation. No late assignments will be accepted. Emergencies require that you contact the instructor ASAP. Request for a late submission after the due date and time will not be granted.

- B. Grading Scale

- A = 100 – 90%
- B = 89 – 80%
- C = 79 – 70%
- F = Below 70%

- C. Disabilities Statement:

If student has special needs addressed by the Americans with Disabilities Act (ADA) and needs course materials in an alternative format, please notify instructor immediately. Reasonable efforts will be made to accommodate special needs.