

Research Methodology
Undergraduate 2 credit course in Polymer Engineering curriculum
Amirkabir University of Technology

Chapter 1: Research definition and characterization (Specification of a scientific research, Different scientific researches, Definition of research questions, Research journey, Research process, How to choose a research subject?)

Chapter 2: Scientific moral (Adherence to the promise, Keeping order, Reference to texts, forms, tables, etc., taken from the other papers,..., Failure to publish research material without the knowledge of the project partner or supervisor, Respect for participation and scientific contribution, Mention the name of the university or research center in which the research was conducted)

Chapter 3: Research process (Project proposal structure, How to include information about a project, Literature survey, Preparation of summary table of articles, Important soft wares for citation (End note, Mendely)

Chapter 4: Designing practical research steps (Safety of materials, instruments and labs, MSDS (Material Safety Data Sheets), International Standards (ASTM, ISO, BS, DIN) and National standards (ISIRI), Determination of project variations, Using suitable soft wares if it is necessary, Grade selection and composition of raw materials, Process conditions (Temperature, Time, ...) selection

Chapter 5: Writing a project report or thesis (Features of a good report, Theoretical part of a research Practical part of a scientific report, Results and discussion, General results, suggestions and References)

Chapter 6: Defense seminar (General tips of an Oral presentation and preparing a Power point)

Chapter 7: Writing paper, Patent and Resume (Paper structure, Journal papers and conference papers, ISI papers, Intellectual Property and Patents, Resume structure)

Chapter 8: training (Training philosophy and goals, Training report structure)

References:

- 1- A Practical Guide to Research Methods, K. Dawson, Translated by N. Shams Ghareneh and S. Najafi Zangeneh, Jahad daneshgahi, First edition.
- 2- Research and presentation in engineering, R. Safabakhsh.
- 3- Research methods in educations, L .
- 4- Fundamentals of Research Methodology and Statistics, S. Y. Kumar.