GUST | Computer Science Department

CSC 390 Introduction to Academic Research in Computer Science

(3 contact hours – 0 lab hours – 3 credits)

Syllabus

General Information

Instructor	
Office	
phone	
Class Time & Location	
Office Hours	
Teaching Assistant	

Course Description

Introduction to Academic Research in Computer Science. Topics include: Research techniques and approaches, Computer Science research areas and metrics, literature review, writing a research paper, referencing and citations, and developing an effective workflow.

Course Prerequisites

Junior standing

Course Category

CS Major elective

Course Outcomes

After successful completion of this course the student will be able to:

1. write a research paper following one or more research methods
2. evaluate different research works and discuss them
3. apply appropriate research methodology for a given research problem
4. search for relevant literature in scientific databases
5. present and communicate their research work

Required Textbooks

- Justin Zobel. Writing for computer science. (2016) Springer. ISBN 978-1-4471-6639-9

Supplementary Textbook

- William Trochim, James P. Donnelly, and Kanika Arora. (2016). Research Methods: The Essential Knowledge Base, 2nd Edition. ISBN: 9781133954774
- Mukherjee, S.P. (2019). A Guide to Research Methodology: An Overview of Research Problems, Tasks and Methods (1st ed.). CRC Press. ISBN: 9780429289095
- *Wayne C. Booth, et. al.. The craft of research, fifth edition* (5th ed.). (2024). University of Chicago Press. ISBN: 9780226826677

Tentative Schedule

Week	Topic	Material (chapters and/or other material)
1-3	Introduction to research Research ethics Research formulation Type of publication Areas in CS Research tools	1 & 2, 17
4-5	Reading + oral communication skills	3
6-7	Writing skills: title, introduction	5
8-9	Writing skills: literature review, references	3
10	Research paper: proposal	
11	Writing skills: figures, equations, in-text citations	9 & 10
12	Completing the paper + discussions	13
13	Presentation skills	16
14-15	Seminar mock-up	

Grading Scheme

Grade Category	Weight
Term paper	40%
Hands-on Exercises	15%
Case studies	25%
Presentations	20%

OSC Accommodation

I wish to fully include persons with disabilities in this course. Please let me know if you need any special accommodations in the curriculum, instruction, or assessments of this course to enable you to fully participate. I will maintain confidentiality of the information you share with me. If you have a disability that impacts your classroom performance and wish to request an accommodation, contact the One-Stop Student Services Center (OSC) at N3-101. The OSC requires up-to-date documentation regarding your disability to enable them to comply with your request. Admission of OSC is voluntary and will be handled in a confidential manner. GUST does not discriminate against people with disabilities.