

# CS590: Research Methods in Computer Science

## Course Syllabus – Spring 2026

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### 1. Course Description

This course introduces issues related to conducting research in computer science, including research methods, bibliographic search, scientific writing and presentations, evaluation of research, and ethics. It is intended for first- or second-year PhD students and is a required course.

#### Prerequisites

First- or second-year PhD standing.

#### Activities

Presentations, discussions, and hands-on activities with peer and instructor feedback.

### 2. Course Goals and Learning Objectives

#### Learning Objective 1: How to Do Research

- Orientation to the university, department, advisors, funding, and milestones
- Literature search and impact assessment tools
- Critical reading and reviewing of papers
- Selecting research topics and planning research
- Research ethics and responsible conduct

#### Learning Objective 2: How to Present Research

- Scientific writing and argumentation
- Oral presentations

#### Learning Objective 3: Research Methods in CS

Faculty presentations on research methods in different CS areas.

### 3. Course Materials

Readings will be available online. No special technology required beyond a basic computer.

## 4. Course Policies

### Grading

Pass/Fail grading. Evaluation based on assignments, presentations, and participation. Passing requires at least 70% of total points.

### Attendance

Attendance is mandatory starting week 3. Two unexcused absences are allowed; additional absences incur penalties.

### Academic Integrity

Students must follow UIC academic integrity standards. Generative AI tools are generally prohibited, with limited post-draft editing exceptions.

## 5. Schedule

The schedule is tentative and subject to change:

Week	Topic
week 1	Introduction & How to be a PhD student
week 2	How to be a PhD student
week 3	How to read papers
week 4	How to find papers
week 5	How to review papers
week 6	How to write papers
week 7	Ethics, GenAI, IRB
week 8	Roadmap
weeks 9-10	Project 1 presentations
Spring Break	NO CLASS
weeks 11-14	Methods in different CS areas
week 15	Final project presentations
Final week	Final project presentations

## 6. Assignments

Major components include:

1. Project 1 (group paper critique and presentation)
2. Final project (individual)
3. Attendance and reviews of distinguished speaker talks