Course Number	**CS 435**	**Course Title**	**Software Engineering**
Semester Hours	**3**	**Course Coordinator** SP20	**Koushik Sinha**
Catalog Description	Principles, practices and methodology for development of large software systems. Object-oriented principles, design notations, design patterns and coping with changing requirements in the software process. Experiences with modern development tools and methodologies. A team project is an integral part of this course.		

Textbooks

SP18

Pressman, R.S. & Maxim, B.R. (2020). *Software Engineering: A Practitioner's Approach,* McGraw Hill, 6th Edition. ISBN: 978-1259872976.

References

Various references to tool and language documentation, resources on patterns, principles, etc.

Course Learning Outcomes

- To understand and develop experience working within a collaborative team environment.
- To become familiar with concepts of software development methodologies and notations.
- To be able to apply modern development tools and practices to create software both individually and collaboratively.
- To understand basic principles of Object Oriented design and the value of software patterns.

Assessment of the Contribution to Student Outcomes

SP20

Outcome →	1	2	3	4	5	6
Assessed →	X	X	X		X	X

Prerequisites by Topic

CS 330 with a grade of *C* or better or graduate standing; CS 306 with a grade of *C* or better recommended.

Major Topics Covered in the Course

1. Introduction to software development {2 classes}
2. Perspectives on software process {3 classes}
3. Introduction to software best practices {3 classes}
4. Communication, collaboration and teamwork {6 classes}
5. Software development tools & environment IDE, testing framework, build scripts {3 classes}
6. Coding style and conventions {2 classes}
7. Object oriented principles {5 classes}
8. Practices and process in depth {6 classes}
9. Design notations {3 classes}
10. Software design patterns {5 classes}
11. Anti-patterns {2 classes}

Latest Revision: Fall 2020