SOFTWARE ENGINEERING

UNIT – 1

TOPIC – 1

INTRODUCTION

Introduction to Software Engineering

1. What is Engineering?

- **Engineering** is the process of designing and building things to solve problems.

- It involves creating a plan and then making something useful, such as a bridge or an application.

2. What is Software?

- **Software** is a set of instructions that tells a computer what to do.

- It's similar to a recipe that guides a computer in performing tasks.

3. Definition of Software Engineering

- **Software Engineering** is a structured approach to developing, operating, and maintaining software.

- It involves the application of engineering principles to software development in a systematic method.

Why Software Engineering is important?

Software engineering provides a structured approach to designing and developing software, which is crucial for creating reliable and efficient applications.

Real-World Impact: As a graduate student, mastering software engineering equips you with the skills to build software that solves real-world problems, from simple apps to complex systems.

Real-World Examples of Software Engineering Implementation:

1. **Healthcare Systems:** Software engineering principles are used to develop electronic health records (EHR) systems that manage patient data, ensuring accuracy, security, and efficiency in healthcare delivery.

2. **E-commerce Platforms:** Online shopping sites like Amazon and Flipkart rely on robust software engineering practices to handle millions of transactions daily, ensuring a seamless user experience.

3. **Mobile Applications:** Apps like WhatsApp and Uber are built using software engineering techniques to ensure they are scalable, secure, and user-friendly.

For graduate students, understanding software engineering is essential because it not only helps in creating functional software but also ensures that the software is maintainable, scalable, and reliable. This knowledge is applicable in various industries, making it a valuable skill set for your career.