## Introduction and Overview

Lecture 1

Software Engineering CUGS course Spring 2011

PINGS

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Part II A life cycle model





## Part I Definition and role of Software Engineering



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#### How the customer explained it



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How the project leader understood it

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Definition and role of SE

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#### How the analyst designed it



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## A typical Software Project





How the programmer wrote it

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#### How the business consultant described it





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#### What operations installed



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How the customer was billed

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#### How it was supported



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Finally, what the customer really needed

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#### Why do we need SE?



Charette, R.N. (2005) Why Software Fails, IEEE Spectrum, September 2005

Frequent failures:

- Space shuttle
- Nike
- Denver airport
- · LA airport



Geppert, L (2004) Lost Radio Contact Leaves Pilots On Their Own, IEEE Spectrum, Nov 2004



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### Software Engineering

 Application of systematic, disciplined, quantifiable approach to software development, operation and maintenance of software. (*IEEE-Std.*)









#### **Studying SE theory**



Reading about concepts and methods derived from experience

- Almost everything have their pros and cons
- Quite little is based on mathematical theory
- Requires disciplined plan for reading different sources



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- **Discuss industrial relevance**
- Arrange examination
- Answer your questions
- Listen to feed-back: .
- Ask us questions .
- Give us suggestions for further improvement

Practice analysing and

designing small examples

Participate in examination

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#### Part I Definition and role of SE

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#### **Ambition level**



 You will know enough to communicate easily with professional software engineers

- You will have the basic knowledge to start generating your own experience, perhaps already obtained
- You will have a curious, but critical, attitude towards existing and new methods



# Contents of a Software Life Cycle



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