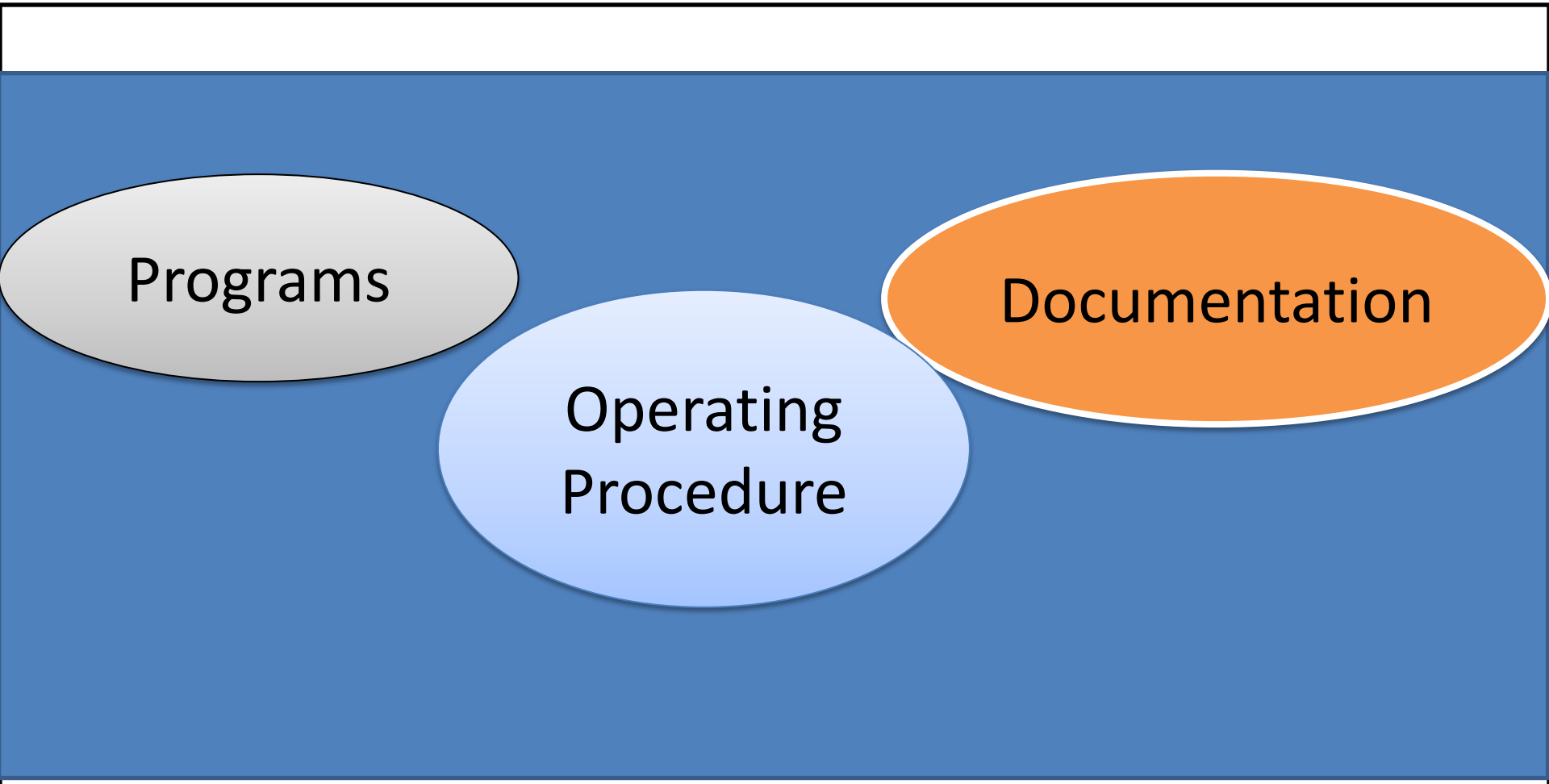
Subject Name: Software Engineering

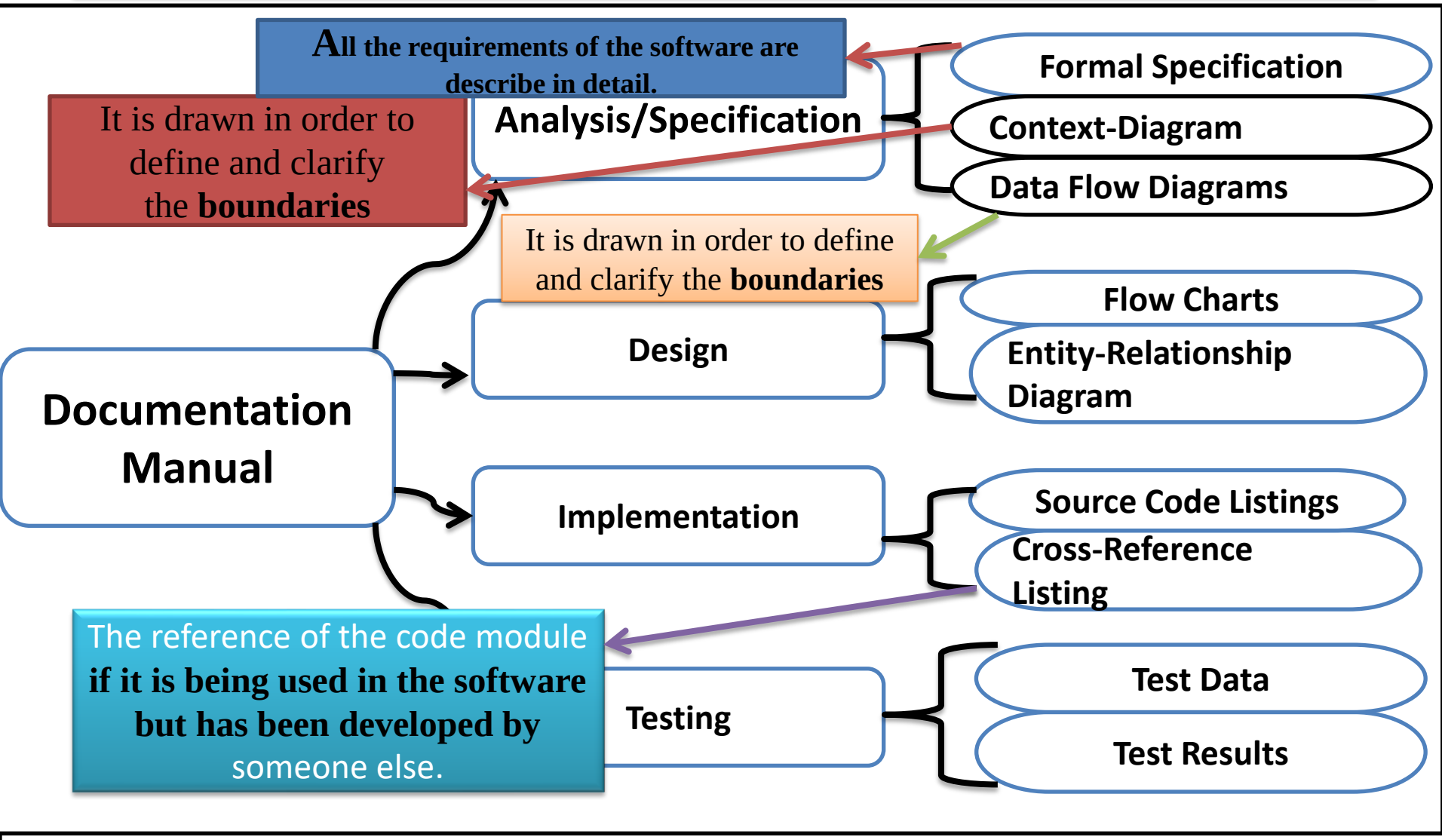
Subject Code: (BCSC-0009)

Topic Name: Software Engineering

Software



Manuals in Documentation



Software Engineering

- The term **software engineering** is the product of two words, **software**, and **engineering**.
- The **software** is a collection of integrated programs.
- **Engineering** is the application of scientific and practical knowledge to create, design and maintain processes.
- It is a process of analyzing the requirements of user and then designing, building, and testing software application which will satisfy these requirements.

IEEE Definition of Software Engineering

Software engineering as the application of a systematic, disciplined, which is a computable approach for the development, operation, and maintenance of software.

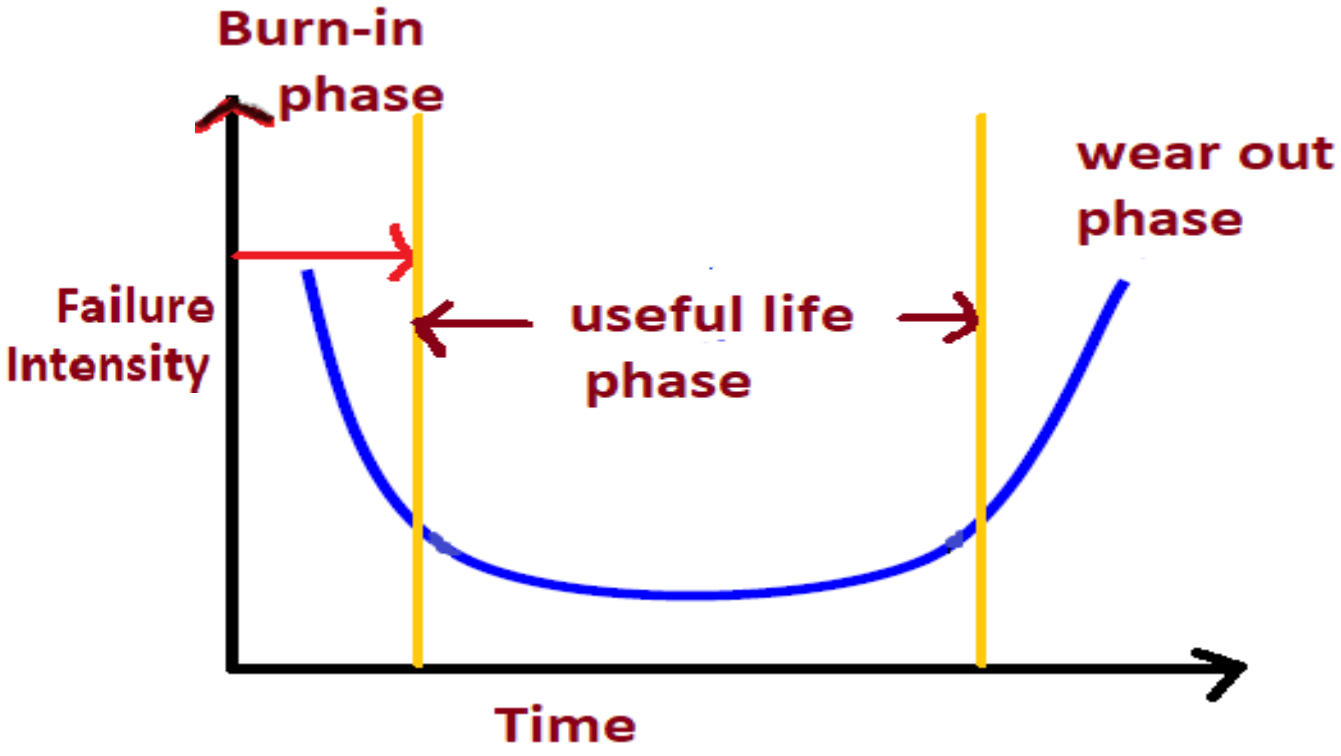
Boehm's Definition of Software Engineering

The practical application of scientific knowledge to the creative design and building of computer programs.

It also includes associated documentation needed for developing, operating, and maintaining them.

Characteristics of Software

Software Does not wear out



Characteristics of Software

Portability

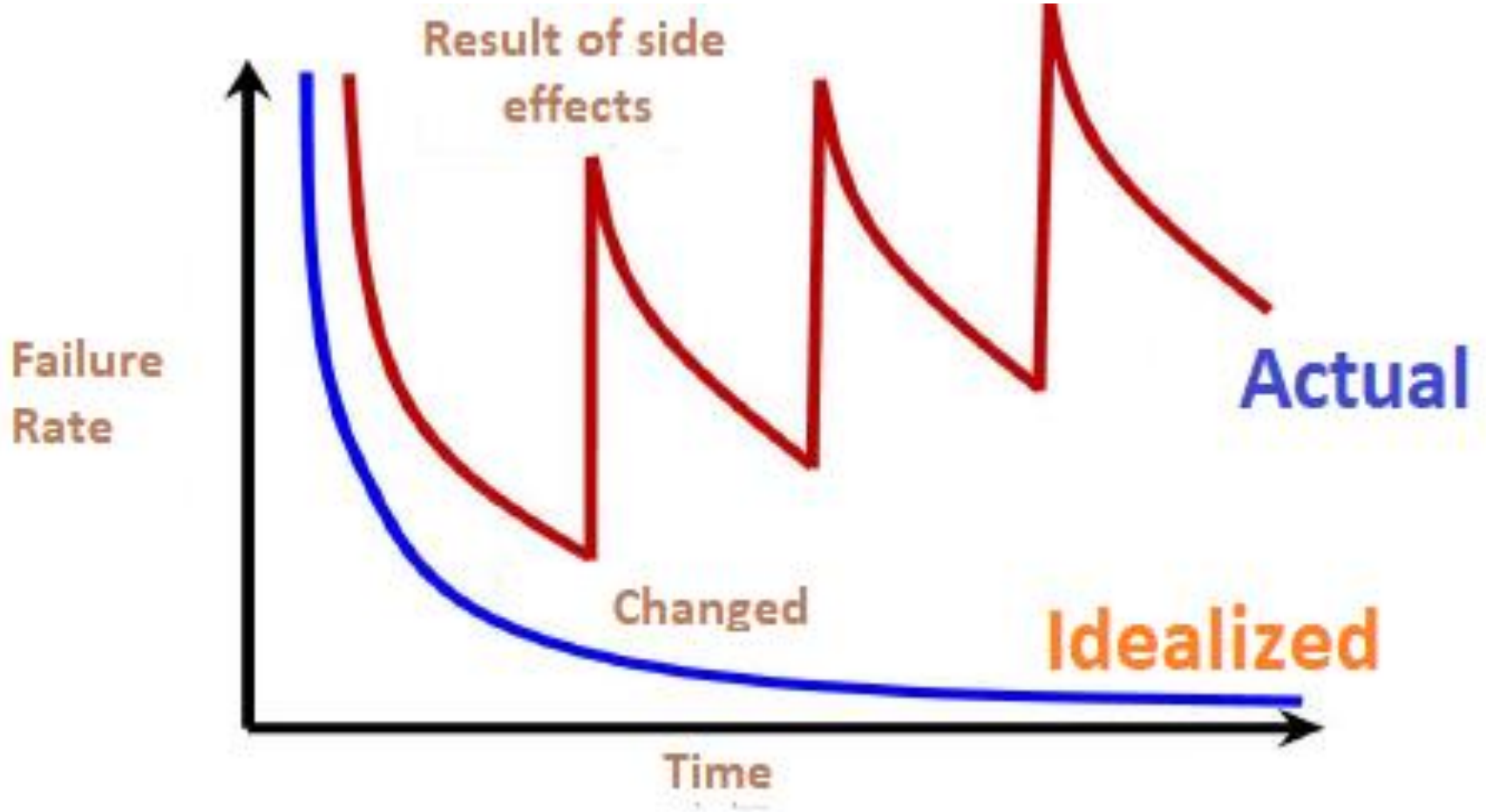
A set of attributes that bears on the ability of the software to be transferred from one environment to another, without or minimum changes.

Software Failure

If there is any bug or any error in a program or a system then we will get incorrect or unpredicted result.

Due to error the behave of system will be inappropriate.

Failure Curve of Software



Open Source Software

Software in which source code is available is known as Open Source Software.

Ex: PHP, Linux, MySQL etc.

Need of Software Engineering

Reduce Complexities

Software engineering divides big problems into various small issues and then start solving each small problem one by one.

Need of Software Engineering(cont..)

DecreaseTime

Anything that is not made according to the project always wastes time.

And if you are making software/application, then you may need to run many codes to get final running code.

if you are making your software according to the software engineering method, then it will decrease a lot of time.

Characteristics of Software

Functionality

It refers to the degree of performance of the software against its intended purpose. It basically means are the required functions.

Characteristics of Software

Reliability

A set of attribute that Bear on the capability of software to maintain its level of performances understated conditions for a stated period of time.

Characteristics of Software

Efficiency

It refers to the ability of the software to use System Resources in the most Effective and Efficient Manner. The software should make effective use of storage space and executive commands as per desired timing requirement.

Characteristics of Software

Usability

It refers to the extent to which the software can be used with ease. Or the amount of effort or time required to learn how to use the software should be less.

Characteristics of Software

Maintainability

Refers to the ease with which the modifications can be made in a software system to extend its functionality, improvement, performance or correct errors.

Characteristics of Software

Portability

A set of attributes that bears on the ability of the software to be transferred from one environment to another, without or minimum changes.

Software Failure

If there is any bug or any error in a program or a system then we will get incorrect or unpredicted result.

Due to error the behave of system will be inappropriate.

Program

Program can be defined as the set of instruction, that perform specific task.

Actually, program is developed by an individual or a group of programmers for their own use.

Further classification of a program is not possible.

There is no need to use SDLC(Software Development life cycle in program).

There is no need of well defined/dedicated user interface in program.

Software

Software is a collection of programs.

There may be bundles of programs and data files in software.

There is need to use SDLC(Software Development life cycle) in software.

There is a well defined/dedicated user interface in software.

Software(cont..)

Further software is classified into two categories