Course Objective and Outcome Form
Department of Electrical and Computer Engineering
School of Engineering and Physical Sciences
North South University, Bashundhara, Dhaka-1229, Bangladesh

1. **Course Number and Title:** **CSE 327 Software Engineering**
2. **Number of Credits:** **03**
3. **Type:** **Core**
4. **Prerequisites:** **CSE311**
5. **Faculty Name:** **Dr. Md Musfique Anwar**
6. **Room:** **SAC 1052 C**
7. **Office Hours:** **W : 10:30 am – 12:30 pm**
8. **Email:** **musfique.anwar@northsouth.edu**
9. **Contact Hours:** **Lectures – 3 Hours/week**
10. **Course Summary:**

Follows the software life cycle - from requirement, specification, and design phases through the construction of actual software. Topics include management of programming teams, programming methodologies, debugging aids, documentation, evaluation and measurement of software, verification and testing techniques, and the problems of maintenance, modification, and portability.

11. **Course Objectives:**

The objectives of this course are

a. Give the students an appreciation of the complexity involved in the inception, design, implementation and delivery of modern software systems.
b. Students should appreciate what makes quality software and how software engineering topics/methods can be effective to deliver such quality products.
c. The course will present theoretical material and create opportunities for students to apply what they learn in class and from other sources.

12. Course Outcomes (COs):

Upon Successful completion of this course, students will be able to:

Sl.	CO Description	Weightage (%)
1	**identify** the requirements of a software system, including technical-functional requirements, non-technical requirements, and wider societal impact.	10
2	**design** an object oriented software architecture and **express** the architecture using UML or other standard tools under a set of requirements and/or constraints,.	30
3	**choose** an appropriate design pattern for a particular scenario to solve the problem.	20
4	**implement** a software system with multiple, possibly heterogeneous, components for a given set of requirements..	20
5	**devise** test cases to test functions and/or functionality of software system against a set of requirements.	20

13. Mapping of CO-PO:

Sl.	CO Description	Bloom's taxonomy domain/level	Delivery methods and activities	Assessment tools
CO1	**Identify** the requirements of a software system, including technical-functional requirements, non-technical requirements, and wider societal impact.	Cognitive/ Apply	Lectures	Quiz, Project (SRS)
CO2	**Design** an object oriented software architecture and **express** the architecture using UML or other standard tools under a set of requirements and/or constraints,.	Cognitive/ Create	Lectures	Quiz
CO3	**Choose** an appropriate design pattern for a particular scenario to solve the problem.	Cognitive/ Understand	Lectures	Quiz
CO4	**Implement** a software system with multiple, possibly heterogeneous, components for a given set of requirements..	Cognitive/ Create	Lectures	Project ,Demonstration
CO5	**Devise** test cases to test functions and/or functionality of software system against a set of requirements.	Cognitive/ Apply	Lectures	Quiz/Exam

14. Resources

Text books:

No	Name of Author(s)	Year of Publication	Title of Book	Edition	Publisher's Name	ISBN
1	Ian Sommerville	2010	Software Engineering	9th	Pearson	ISBN-13: 978-01370351 51
2	Erich Gamma, Richard Helm, Ralph Johnson and John Vlissides	1994	Design Patterns: Elements of Reusable Object-Oriented Software	1st	Addison-Wesley Professional	ISBN-13: 978-02016336 10

Reference books:

No	Name of Author(s)	Year of Publication	Title of Book	Edition	Publisher's Name	ISBN
1	Stephen R Schach	2010	Object-Oriented and Classical Software Engineering	8th	McGraw-Hill Education	ISBN-13: 978-00733761 89

Online resources:

- https://airbrake.io/blog/design-patterns/
- https://www.atlassian.com/git/tutorials
- https://git-scm.com/docs/gittutorial
- https://laravel.com/
- https://www.djangoproject.com/
- http://hibernate.org/
- https://spring.io/
- https://msdn.microsoft.com/en-us/library/aa480021.aspx

15. Weightage Distribution among Assessment Tools

Assessment Tools	Weightage (%)
Quizzes	15
Midterm	25
Final Exam	30
Project	30
	100

16. Grading policy: As per NSU grading policy available in http://www.northsouth.edu/academic/grading-policy.html

North South University
Department of Electrical and Computer Engineering
CSE 327 - Software Engineering (Spring 2020)

Project Assessment

SL#	Item	Marks	Notes
1	Submission and completeness of SRS	5	Due 12/02/2020. This is a **Hurdle**
	User story	5	
2	Submission and completeness of SDS	10	Due 19/02/2020. This is a **Hurdle**
3	Use of GIT (for documents and source code)	10	
4	Utilisation of a tools (Slack, Trello), frameworks for writing, testing and executing source code	10	Your choice (frameworks) must be cleared from me.
5	Use of Artificial Intelligence / integrate any online services like GPS tracking using Google Map	10	Try to leverage existing AI/Online solutions, no need to build your own AI
6	Use of Github Wiki	5	
7	Source code documentation (coverage and quality)	10	I will check on GIT whether this was done regularly or right at the end. Zero (0) marks for comments written right at the end.
8	Unit tests (coverage and quality)	10	
9	UI Design (ease and beauty)	10	
10	Use of Model-View-Controller (MVC) Architectural pattern	5	
11	Project Demo	10	Week 11
	Total	**100**	**Work hard !**

N.B.:

i. **I will check progress of the project on week 8, 9 and 11.**

ii. **You will be notified if I decide to change any of the above.**