Ahsanullah University of Science and Technology
Bangladesh

COURSE OUTLINE

1. Title: **Formal Languages and Compilers Lab**

2. Code: **CSE 4130**

3. Credit hours: **0.75**

4. Level: **Level 4, Term 1**

5. Faculty: **Engineering**

6. Department: **Computer Science and Engineering (CSE)**

7. Programme: **Bachelor of Science in Computer Science and Engineering (B.Sc. in CSE)**

8. Synopsis from the Approved Curriculum:

Laboratory works based on CSE4129.

9. Type of course (core/elective): **Core**

10. Prerequisite(s) (if any): **CSE1203 (Discrete Mathematics)**

11. Name of the instructor(s) with contact details and office hours:

Md. Aminur Rahman
Room: 7A01/L
Phone: Extension 516
E-mail: aminur.cse@aust.edu, aminur.aust27@outlook.com
Office hour: Sunday 12:10 PM – 1:00 PM; Thursday 09:40 AM - 10:30 AM, Thursday 11:20 AM - 12:10 PM

Amir Hossain Raj
Room: 9B02
Phone:
E-mail: raj.cse@aust.edu
Office hour: Monday 2:40 PM - 3:30 PM; Tuesday 1:50 PM - 3:30 PM

12. Semester Offered: **Fall - 2021**

13. Percentages of Assessment Methods

Method	Percentage
Attendance and Class Performance	**20**
Assignment (Offline)	**30**
Lab Quiz (Online / Lab Final)	**40**
Project	**10**

14. Week wise distribution of contents and assessment methods

Week	Topics	Assessment Method(s)
1	**Scanning and Filtering a Source Program** Development of a program which can filter comments and white space characters from a source program.	
2	**Lexical Analysis** Implementation of a program that reads any simple program as source and separates out the valid tokens from the source program.	**Class Assignment / Online**
3	**Symbol Table Construction and Management** Development of programs for symbol table construction and management.	**Class Assignment / Online**
4	**Detecting Simple Syntax Errors** Development of programs to detect and report simple syntax errors.	**Class Assignment / Online**
5	**Use of CFGs for Parsing** Detecting simple syntactic and semantic errors in expressions and statements using Context Free Grammars (CFG).	**Class Assignment / Online**
6	**Predictive Parsing** Manual implementation of LL(1) and LR(1) parsing algorithms.	**Class Assignment / Online**
7	**Term Final and Intermediate Code Generation and Machine Code Generation** Implementation of programs for intermediate code generation and machine code generation phases.	**Class Assignment / Online** **Final Quiz**

15. References

17.1. Required (if any)

1. ***Compilers: Principles, Techniques and Tools*** **(2nd Edition).**
   Authored by: Aho A. V., Lam M. S., Sethi R., Ullman J. D.
   Publisher: Pearson Education, 2007.
2. ***Introduction to Automata Theory, Languages, and Computation*** **(3rd Edition).**
   Authored by: Hopcroft J. E., Motwani R., Ullman J. D.
   Publisher: Pearson Education, 2007.

17.2. Recommended (if any)

1. **Google Classroom**