

Sirindhorn International Institute of Technology Thammasat University
CSS 321 Theory of Computation Course Syllabus

1. **Course Information**

Semester/Year: 1/2025

Course Code: CSS 321

Coordinator: Asso. Professor Nguyen Duy Hung (hung@siit.tu.ac.th)

2. **Course Description:** You will be able to understand different models of computers (Finite Automaton, Push-down Automata, Turing Machines); Understand the relationships between different classes of computer languages, computations and complexity; ~~Understand the basics of compiler design and software development environments.~~

3. **Grading:** **P' Arm's policy: NO F's**

- Exams: Midterm 30% Final 36%
 - Homework (around 12 problem sets) 24%
 - On-line quizzes during the lectures: 10%
 - Lecture attendances: miss less than 5 times. *According to SIIT Rules, students who miss more 30% of classes will not be allowed to take the final exam and will automatically fail (Grade F) the course.*
- P' Arm's policy:**
No class attendance. No roll calls.

4. **Examinations** **Open-book exams**

- Midterm Examination: 25 Sept 2025 **2 hours**
- Final Examination: 24 Nov 2025 **3 hours**

5. **Sections:** There are two sections using the same lecture notes and exams (other things like problem sets, attendance checks, in-class quizzes are decided by the instructor of each section).

- Section 1: Instructor Asso. Professor Nguyen Duy Hung, Lecture time Tue 9:00-12:00 BKD 2406
- Section 2: Instructor Dr.Prachya Boonkwan, Lecture time Wed 09:00-12:00 BKD 3204

6. **Learning materials:**

- Text book: Elements of the Theory of Computation (2nd Edition) by Harry Lewis and Christos Papadimitriou, ISBN-13: 978-0132624787
- Lecture notes, supplementary notes, exam sample questions, etc.

7. **Lecture attendance:** You are very STRONGLY encouraged to attend lectures. Although the instructors will follow the lecture notes rather closely, it WILL be far simpler to understand the materials from the lectures.

Attendance check will be done randomly, at any time during the lectures without prior notice. If you miss five times, you will automatically fail.

8. **Quizzes, Assignments and Exams:** There will be no makeup for missed work; an unexcused absence will be given a grade of 0. The instructor or coordinator should be notified before missing any exam or assignments if at all possible and immediately thereafter when not possible. The instructor will determine if the absence from an exam will be excused.

9. **Weekly assignments:**

- Done outside lecture times.
- You are encouraged to work with other students but you need to write or type your own solutions.
- Plagiarism, duplication solutions, and other forms of cheating will be checked. A violation of academic integrity will be punished to the highest degree.
- You must submit your work via the Google Classroom of your section. Late submission (marked by Google Classroom) = 0

10. **Course's Rules and Regulation**

- Lectures and course assignments are conducted on-site. Recorded lecture videos are available at the lecture note system (several days after the lecture times).
- During the lecture time, when I TALK, you LISTEN. Be respectful to your classmates and your instructor. Keep your voice down. No chit-chatting. Do not disturb the class. You should keep silence if you do not have questions to ask.
- Instructor may ask you to reply to some question during lectures. If you do not respond, your attendance is not counted.

P' Arm's policy:

I'm ***NOT*** this strict. Just keep your voice down. You're allowed to bring your food and beverages in. But if it's beer, wait until the end. :P

You're also allowed to play RoV if you come as a group. However, one member of your group must take the responsibility and pay attention to the class, as he/she has to teach the rest of your team. Learning is teamwork. Please treat it as such.

CSS321 1/2025, Section 1, Schedule of lectures and Assignments

Lecture	Date	Lecture content	Weekly Homework	Due date
Lecture 1	5-Aug	Chapter 1: 1.1 (Set), 1.2 (Relation and Function)	Problem set 1	12-Aug
	12-Aug	Her Majesty the Queen's Birthday (Holiday)		
Lecture 2	19-Aug	Chapter 1: 1.3 (Special types of binary relations), 1.4 (Finite and Infinite sets)	Problem set 2	26-Aug
Lecture 3	26-Aug	Chapter 1: 1.5 (Proof techniques), 1.7 (Alphabets), 1.8 (Language representations)	Problem set 3	2-Sep
Lecture 4	2-Sep	Chapter 2: 2.1(DFA), 2.2 (NFA), 2.3 (FA and regular expressions)	Problem set 4	9-Sep
Lecture 5	9-Sep	Chapter 2: 2.4(non-regular languages), 2.5 (State minimisations)	Problem set 5	16-Sep
Lecture 6	16-Sep	Chapter 3: 3.1 (Context free grammars), 3.2 (Parse trees)	Problem set 6	25-Sep
	25-Sep	Mid term TIME 09:00 - 11:00		30-Sep
Lecture 7	30-Sep	Chapter 3: 3.3 (PDA)	Problem set 7	
				7-Oct
Lecture 8	7-Oct	Chapter 3: 3.4 (PDA and Grammar), 3.5 (Languages not context-free)	Problem set 8	14-Oct
Lecture 9	14-Oct	Chapter 3: 3.5 (Determinism and Parsing) - Mid score announcement	Problem set 9	
				21-Oct
Lecture 10	21-Oct	Chapter 4: 4.1 (Definition of TM)	Problem set 10	28-Oct
Lecture 11	28-Oct	Chapter 4: 4.2 (Computing with TM)	Problem set 11	4-Nov
Lecture 12	4-Nov	Chapter 4: 4.3 (Extensions of TM)	Problem set 12	
Lecture 13	11-Nov	Reserve for optional topics		
Review	18-Nov	Review for final exam		
		Final exam: 24 Nov 2025 TIME 13:30 - 16:30		