# Course Syllabus

## 01076121 Theory of Computation

### Computer Engineering, KMITL

**Instructor**: Assoc. Prof. Dr. Kietikul Jearanaitanakij

**Email**: kietikul.je@kmitl.ac.th

**Course Line group**:
https://line.me/R/ti/g/Tyf7O1iQk3

**Lecture playlist on YouTube** : Study clip(s) before attend each class.

https://youtube.com/playlist?list=PLDDdXBbnvycQI9ENIW-uQrLZi7VSi6lF-

**Text book**: "An Introduction to Formal Languages and Automata", by Peter Linz.

**Handout**:

https://drive.google.com/file/d/1w5gOaLO6I6RHVW_fo4KPS7sZoRp6Mw9S/view?usp=sharing

**Exercise and homework:**

https://drive.google.com/file/d/1KsjTg2FTLIutqwmQp6ktVW0ax__GqVYx/view?usp=sharing

**Grading:**

- **Homework** (10 submissions) = 30%
  **Link for homework submission**:
  https://forms.gle/EVem3RgQDtGo8HxX8

- **Assignment**: Application of Regular Expression (11-13 students/group) = 20%
  **Link for creating assignment group**:
  https://docs.google.com/spreadsheets/d/1RQH20YCWMj7UCK-LHIGfNHpfQjb-fxDNZl8dsvRNdMw/edit?usp=sharing

  **Link for assignment submission**:
  https://forms.gle/8g4cZ2DUm13TNbCh8

- **Final exam** = 50% (Close book)

# Tentative Agenda

| Week | Topics |
|---|---|
| 1 | Introduction |
| 2 | Mathematical Preliminaries |
| 3 | Deterministic Finite Automata |
| 4 | Nondeterministic Finite Automata |
| 5 | Regular Expression and Regular Grammar |
| 6 | Properties of Regular Language |
| 7 | Pumping Lemma |
| 8 | More Applications of Pumping Lemma |
| 9 | Context-free Languages |
| 10 | Context-free Grammars |
| 11 | Pushdown Automata |
| 12 | Properties of Context-free Languages |
| 13 | Pumping Lemma for Context-free Languages |
| 14 | More Applications of Pumping Lemma |
| 15 | Turing Machine |