

ITIS 6010/8010: Software Engineering for AI-Enabled Systems (Spring 2025) Course Schedule

The following table provides an outline for the topics and activities that will be delivered during each module for this course. Any changes on the given dates will be updated accordingly and announced on Canvas.

Calendar	Topic	Activities and Submissions
Week-1 (1/13)	<ul style="list-style-type: none"> Syllabus Overview and Introduction Lecture 1: Software Engineering for AI 	<ul style="list-style-type: none"> Team Formations GitHub Setup
Week 2 (1/20)	<ul style="list-style-type: none"> Lecture 2: Requirements Gathering for AI Lecture 3: Quality Requirements for AI 	Optional Reading: How to Read a Paper <ul style="list-style-type: none"> Team Project Discussions
Week 3 (1/27)	▶ Lecture 4: Model Quality PROJECT PROPOSAL PRESENTATION (in-class)	▶ Project Proposal Submission (Due 1/26)
Week 4 (2/3)	<ul style="list-style-type: none"> Lecture 5: Transition from Models to AI-Enabled Systems 	<ul style="list-style-type: none"> Presentation Assignment-1 (in-class) Reading Assignment-1 (Due: 2/2) ▶ Analyzing and Detecting Emerging Quality-Related Concerns across OSS Defect Report Summaries
Week 5 (2/10)	<ul style="list-style-type: none"> Lecture 6: Model Development with ML Focus Lecture 7: Model Development with DL Focus 	<ul style="list-style-type: none"> Presentation Assignment-II (in-class) Reading Assignment-2 (Due: 2/9) ▶ How Much Logs Does My Source Code File Need? Learning to Predict the Density of Logs
Week 6 (2/17)	<ul style="list-style-type: none"> Lecture 8: Model Development with DL-Supervised Learning Lecture 9: Model Development with DL-Unsupervised Learning Lecture 10: Model Development with DL-Reinforcement Learning 	<ul style="list-style-type: none"> Presentation Assignment-3 (in-class) Reading Assignment-3 (Due: 2/16) ▶ Leveraging Statistical Machine Translation for Code Search
Week 7 (2/24)	MID-PROJECT PRESENTATION (in-class)	<ul style="list-style-type: none"> Project Mid-Report Submission (Due: 2/23)
Week 8 (3/3)	Student Spring Recess – No Classes	

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Week 9 (3/10)	Lecture 11: Metrics and Measures for AI-Enabled Systems	<ul style="list-style-type: none"> • Presentation Assignment-4 (in-class) • Reading Assignment-4 (Due: 3/9) <p>► TraceJIT: Evaluating the Impact of Behavioral Code Change on Just-In-Time Defect Prediction</p>
Week 10 (3/17)	Lecture 12: Tradeoffs among Modeling Techniques Lecture 13: Model Risks and Planning for Mistakes	<ul style="list-style-type: none"> • Presentation Assignment-5 (in-class) • Reading Assignment-5 (Due: 3/16) <p>► Retrieve and Refine: Exemplar-based Neural Comment Generation</p>
Week 11 (3/24)	Lecture 14: Software Architecture of AI-Enabled Systems	<ul style="list-style-type: none"> • Presentation Assignment-6 (in-class) • Reading Assignment-6 (Due: 3/23) <p>► Do Pretrained Language Models Indeed Understand Software Engineering Tasks?</p>
Week 12 (3/31)	Lecture 15: Data Quality and Development Lecture 16: Large Dataset Management	<ul style="list-style-type: none"> • Reading Presentation-7 (in-class) • Reading Assignment-7 (Due: 3/30) <p>► LabelRepair-Sequence Labelling for Compilation Errors Repair</p>
Week 13 (4/7)	Lecture 17: Infrastructure Quality, Deployment, and Operations	<ul style="list-style-type: none"> • Reading Presentation-8 (in-class) • Reading Assignment-8 (Due: 4/6) <p>► A Novel Neural Source Code Representation based on Abstract Syntax Tree</p>
Week 14 (4/14)	Lecture 18: Explainability and Interpretability of AI-Enabled Systems	
Week 15 (4/21)	Lecture 19: Version Control, Data Provenance, and Reproducibility	
Week 16 (4/28)	Lecture 20: Debugging in AI	
Week 17 (5/5)	FINAL PROJECT PRESENTATION (in-class) Due: (5/5) from 2:00 - 4:30 pm	<p>► FINAL PROJECT Report Submission Due: (5/5) @ 11:59PM via Canvas</p>

Dates to Note:

- 4/30 – Last Day of Classes
- 5/1 – Reading Day (i.e., this is your day to study and prepare for your exams)