--- Page 1 ---

\*\*Course Syllabus- Spring 2025\*\*

\*\*Introduction to Fracture Mechanics(Class B)\*\*

.

\*\*Instructor: Professor Sung-Kie YOUN\*\*

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\*\*Teaching Assistant: Honghao tian\*\*

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\*\*Class Hours:\*\* Tuesday 10:05am-11:40am, Friday 1:30pm-3:05pm

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\*\*Course Description\*\*:

This course is designed to provide basic and essential knowledges on Fracture Mechanics for undergraduate and first level of graduate students

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\*\*Contents to be covered:\*\*(could be modified depending on the class situation)

1. Introduction-What is Fracture Mechanics

2. Review of Elasticity

3. Energy Release Rate

4. Stress Intensity Factor

5. Stress Intensity Factor for Complex Cases

6. Inelastic Deformation at the Crack Tip

7. Elasto-Plastic Parameters

8. Introduction to Fatigue

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\*\*Course Evaluation\*\*:

1. Homework Assignments (40), 2. Final Exam. (60)

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\*\*References\*\*:

1. Fracture Mechanics, 4\({}^{\rm th}\) ed. - T.L. Anderson

2. Fracture Mechanics - R.J. Sanford

3. Elements of Fracture Mechanics - P. Kumar

4. Advanced Fracture Mechanics - M.K. Kanniner and C.H. Popelar

5. Others

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