		U-LAS10 20012 LE55				
< >	Nonlinear Mathematics-E2 Nonlinear Mathematics-E2					Li, Douglas
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Mathematical modeling is very important to understand and to analyze natural phenomena, and nonlinear models have been of great importance in many fields. This class emphasizes on mathematical analysis for those nonlinear models, esp. nonlinear differential equations, and the goal of the class is to study introductory theories to deal with nonlinear equations through some examples. Furthermore, this class is also intended for students to enjoy interesting approach to natural phenomena through mathematical analyses. An additional goal of this course is to give a chance to the students to present and discuss mathematics in English.

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The goal of the class is to study introductory theories to deal with nonlinear differential equations through some examples. In addition to learning modern mathematics and proofs, students can learn how to discuss and present mathematical topics in English through this course.

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Some mathematical models appeared in mathematical physics are shown, and fundamental mathematical theories related with those models are explained.
The course will cover the following topics:
1. Mathematical modeling in fluid mechanics (5 weeks)
2. Fundamental theories about differential equations (4 weeks)
3. Analysis of the aimed phenomena through mathematical approach (5 weeks).

Total　14 classes, 1 Feedback session

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(Eligible students) mainly the sciences of the second grade.
Students are required good understanding of both calculus and linear algebra
studied in the first grade.

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The evaluation of the course will take into account the following criteria:
-homework (40%)
-presentation (20%)
-final report (40%)

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Not Specified

Nonlinear Mathematics-E2(2)

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F.G. Tricomi   Differential equations   reprinted form Dover Publications
E. Goursat   A course in mathematical analysis" vol. 1-3   reprinted form DoverPublications

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Students are required to solve exercises given in class for deep understanding of the class.

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This class is an English class of "   " read in the first semester. Their syllabuses are the same to each other, but topics in class especially those of fluid mechanics, are not the same.

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