OBJECTIVES: The objective of this course is to provide graduate students with the basic concepts and applications of some of the advanced topics in finite element modelling: plate and shell problems; dynamic analysis; buckling and non-linear problems.

PREREQUISITE: ES718a or an equivalent first graduate course in the finite element method.

TOPICS:
1. Introduction to cartesian tensor analysis.

CONTACT HRS: 3 lecture hours; (personal study 10 hours) per week.

TEXT: Lecture notes prepared by Dr. A. El Damatty are available on reserve in the Engineering Resource Centre. (It is strongly recommended the notes be brought to class for each lecture.)

REFERENCES: Will be provided.
COMPUTING: A number of assignments will include modification of a basic finite element program written in FORTRAN.

UNITS: SI.

ASSIGNMENTS: The course includes a final project in which a basic finite element program will be modified and used to solve a certain practical problem. Some project topics will be suggested by the instructor. However, suggested topics from the students are welcomed.

EVALUATION: The final course mark will be determined as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Assignments</td>
<td>25%</td>
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<tr>
<td>Class Participation</td>
<td>5%</td>
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<tr>
<td>Final Projects</td>
<td>30%</td>
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<tr>
<td>Final Exam</td>
<td>40%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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</tbody>
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Note: Students must pass the final examination to pass this course. Students who fail the final examination will be assigned the aggregate mark, as determined above, or 48%, whichever is less.

The final examination will be OPEN BOOK.

CHEATING: University policy states that cheating is a scholastic offence. The commission of a scholastic offence is attended by academic penalties which might include expulsion from the program. If you are caught cheating, there will be no second warning.

INSTRUCTOR: Dr. A. El Damatty, P.Eng., EB3029, Ext.88203
email: damatty@julian.uwo.ca - Secretary: EB3005

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