Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
Submit original form and 2 copies. Attach a course syllabus to each.

1. This request is submitted by the Department of Aerospace Engineering
2. Course prefix, number and complete title AERO 605 - Theory of Elasticity

3. Course description (not more than 50 words) Theory of Elasticity. Analysis of stress and strain in two and three dimensions, equilibrium and compatibility equations, strain energy methods; torsion of noncircular sections; flexure, axially symmetric problems.

4. Prerequisite(s) graduate or senior undergraduate standing Cross-listed with MEMA 601

5. Is this a variable credit course? ☐ Yes ☑ No If yes, from _______ to _______. Cross-listed courses require the signatures of both department heads.

6. Is this a repeatable course? ☐ Yes ☑ No If yes, this course may be taken _____ times. Will the course be repeated within the same semester/term? ☐ Yes ☑ No

7. Has this course been taught as a 489/689? ☐ Yes ☑ No If yes, how many times? _______ Indicate the number of students enrolled for each academic period it was taught.

8. This course will be:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history) N/A
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography) Aerospace engineering and related engineering majors

9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

10. Prefix Course # Title (exclude punctuation)
    AERO 605 THEORY OF ELASTICITY

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<th>Lect.</th>
<th>Lab</th>
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<th>Subject Matter Content Code</th>
<th>Admin. Unit</th>
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Do not complete shaded area.

Approval recommended by:

Head of Department [Signature] 9-27-07
Head of Department (if cross-listed course) Date

Chair, College Review Committee [Signature] 11/21/07
Dean of College [Signature] 11/21/07

Submitted to Coordinating Board by:

Dean of College Date

Director of Academic Support Services Date

Effective Date

To have this form reviewed, please send to Linda F. Lacey, Mail Stop 1265 or fax to 847-8737.
OAR/AS-5/04

RECEIVED
OCT 18 2007

N.K. ANAND
MEMA 601 / AERO 605
Theory of Elasticity
Fall 2007

Instructor: Dr. A.A. Benzerga
Office: 736C H.R. Bright Building
Tel: 845-1602
E-mail: benzerga@aero.tamu.edu
Office Hours: To be discussed

Spring 2008 Time: TBA, Location: TBA

Course Description: Review of stress and strain concepts, virtual work and constitutive equations; Derivation of field equations; Analysis and solution of two- and three-dimensional field problems. Advanced elasticity problems.

Prerequisite: Students should have a senior or graduate standing in engineering or equivalent.

Course Evaluation
(i) homeworks (40%)
(ii) Mid-Term Exam (30%)
(iii) Final Examination: 30%

Additional References will be given later.

Course Topics

1. Introduction and Basics 3 hours
2. Constitution of materials 3 hours
3. Review of “Strength of Materials” 3 hours
4. Two-dimensional field problems (Cartesian coordinates) 6 hours
5. Two-dimensional field problems (polar coordinates) 6 hours
6. Three-dimensional problems in elasticity (elements) 3 hours
7. Torsion of beams 6 hours
8. Bending with transverse shear 6 hours
9. Axisymmetric deformations 3 hours
10. Advanced elasticity: Hertzian contact, dislocations. 3 hours

Total 42
Americans with Disabilities Act
The Americans with Disabilities Act (ADA) is a federal antidiscrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities in Room B118 Cain Hall, or call 845-1637.

Copyrights
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Scholastic Integrity
As commonly defined, plagiarism consists of passing off as one's own the ideas, work, writings, etc., that belong to another. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you have the permission of that person. Plagiarism is one of the worst academic sins, for the plagiarist destroys the trust among colleagues without which research cannot be safely communicated. If you have questions regarding plagiarism, please consult the latest issue of the Texas A&M University Student Rules [http://student-rules.tamu.edu/], under the section "Scholastic Dishonesty."