LIST OF DYNAMICS AND VIBRATION COURSES AND CURRICULUM
Mechanical Engineering Department

Autumn Quarter

ME 469 – Applications of Dynamics in Engineering
ME 473 – Instrumentation
ME 588 – Dynamics and Vibrations
ME 526 – Special Topics in Acoustics
AA 571 – Principles of Dynamics I
AA 524 – Aeroacoustics (odd year)
AMATH 570 – Asymptotic and Perturbation Methods
BIOEN 420 – Medical Imaging
EE 436 – Medical Instrumentation

Winter Quarter

ME 470 – Mechanical Vibrations
ME 589 – Vibrations (nonlinear and random dynamics), even-year only
ME 599 – Special Topics on Dynamics and Vibration*
AA 528 – Spacecraft Dynamics and Control (odd year)
AMATH 502 – Introduction to Dynamical Systems and Chaos
AMATH 507 – Calculus of Variations (odd year)
CEE 502 – Structural Dynamics
RADGY 508 – Physical Aspects of Medical Imaging

Spring Quarter

ME 525 – Applied Acoustics I
ME 528 – Acoustics of Environmental Noise (offered irregularly)
ME 599 – Special Topics on Dynamics and Vibration*
AA 480 – Systems Dynamics
AA 553 – Vibrations of Aerospace Systems (odd year)
CEE 515 – Earthquake Engineering I
CEE 517 – Wind Engineering Design
AMATH 572 – Introduction to Applied Stochastic Analysis (even year)
AMATH 575 – Dynamical Systems (odd year)

* Special topics may include vibration of continuous systems, damped systems, and gyroscopic systems.
Suggested Curriculum and Courses for Masters Students in Mechanical Engineering Focusing on Dynamics and Vibration

For students starting in Autumn 2011. Non-thesis option assumed. Credits per quarter for RAs and TAs: minimum = 10, maximum covered by tuition waiver = 11, covered by tuition waiver in summer = 2. Degree requirement = 42 credits.

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<tr>
<td>Engineering Analysis (required)</td>
<td>ME 564(3)</td>
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<td>Numerical Analysis (one course required)</td>
<td>ME 478(3)</td>
<td>AA 540(3)</td>
<td>ME 535(3)</td>
<td>AMATH 581(5) or AMATH 584(5)</td>
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<td>Dynamics and Vibration</td>
<td>ME 469(3)</td>
<td>ME 588(3)</td>
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<td>Special Project ¹</td>
<td>ME 599B(x)</td>
<td>ME 599B(y)</td>
<td>ME 599B(z)</td>
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Other Courses Available (Confirm quarter course is offered with offering department. Check 400-level and non-ME credits permitted with ME Dept.)

| Principles of Dynamics I                  | AA 571(3)   |             |             |             |             |
| Structural Dynamics                        |             |             |             |             | CEE 502(3)  |
| Introduction to Dynamical System and Chaos|             |             | AMATH 502/402(5) |             |             |
| Advanced Methods for Ordinary Differential Equations | AMATH 568(5)² | AMATH 569 Advanced Methods for Partial Differential Equations | AMATH569(5)² | ME 599B(x)  |
| Methods for Partial Differential Equations |             | AMATH 503/403(5) |             |             |
| Continuum Mechanics                        |             |             |             | ME 503(3)²  |             |
| Mechanics of Solids/Structure Mechanics    | AA 530(3)   |             |             | CEE 501(3)  |
| Composite Materials Courses               | ME 450(3)   |             |             | MSE 475(4)  |
| Introduction to Fracture Mechanics         | ME 559(3)   |             |             |             |

Running Total of Credits 12 21 minimum 31 minimum 31 minimum 42 minimum

¹ ME Dept permits up to 6 credits of ME 599B (that is: x+y+z≤6). For students on MS thesis option, substitute 12 credits of ME 700
² For students continuing for PhD