B.S./M.Eng. DUAL DEGREE PROGRAM (Students Entering Spring Quarter 2004-3)

Students in this program work concurrently towards a Bachelor of Science and a Master of Engineering degree in Mechanical Engineering. The B.S./M.Eng. program has a strong career oriented focus, and is primarily directed towards students not considering continued graduate study at the doctoral level. The M.Eng. degree does not include a thesis. Students enrolled in the B.S./M.Eng. dual degree program are required to take on a leadership role in their undergraduate capstone design project. B.S./M.Eng. students take a class in fall of their fifth year, "0304-730 Design Project Management" and subsequently become either team manager or lead engineer on a Multi-Disciplinary Senior Design Team during the winter and spring quarters of their fifth year.

All students in the B.S./M.Eng. program are required to complete three courses: Math I, System Modeling, and Computer Implementation of FEM. Students must select four concentration courses from one of numerous concentration areas. Possible concentrations include thermo-fluids, controls, design, manufacturing, business, and customized program of study. The concentration may be significantly interdisciplinary. By design, a student's program may range over several colleges of the Institute in assembling courses which will best help him or her meet his or her professional objectives.

Sample Course Outline for B.S./M.Eng. Students (233 quarter credit hours)

Year	Fall	Winter	Spring	Summer
1	classes	classes	classes	vacation
2	classes	classes	classes Math Eng. I [4] <**or**> L.A. Core 5 Grad Seminar [0]	co-op #1
3	Thermodynamics [4] Machine Elements [4] Numer. Methods [4] Math Eng. I [4] <**or**> L.A. Core 5 Grad Seminar [0]	co-op #2	Fluid Mech. [4] Intro to EE [4] Adv.Comp.Tech. [4] L.A. Core 6 [4] T/F Lab 1 [1] Grad Seminar [0]	co-op #3
4	Heat Transfer [4] System Dynamics [5] Tech Elec. I [4] Science Elec. [4] Grad Seminar [0]	L.A. Conc. 1 [4] Tech. Elec. II [4] Sys. Modeling [4] Senior Seminar [2] Grad. Conc. I [4] Grad Seminar [0]	L.A. Conc. 2 [4] Tech. Elec. III [4] Transport Phen. [4] Comp. Impl. FEM [4] T/F Lab II [1] Grad Seminar [0]	co-op #4
5	Grad. Conc. II [4] Tech. Elec. IV [4] L.A. Conc. 3 [4] Grad. Elec. I (Des.Proj.Mgmt.) [4] Grad Seminar [0]	Senior Design I [4] Grad. Elec. II [4] Grad. Conc. III [4] Free Elective [4] Grad Seminar [0]	Senior Design II [4] Grad. Elec. III [4] Grad. Conc. IV [4] Grad Seminar [0]	

Students in the B.S./M.Eng. program are normally expected to complete the requirements for the two degrees during the spring of their fifth year. Extensions beyond spring of the sixth year will not be approved.

B.S./M.S. DUAL DEGREE PROGRAM (Students Entering Spring Quarter 2004-3)

Students in this program work concurrently towards a Bachelor of Science and a Master of Science degree in Mechanical Engineering. The B.S./M.S. program has a strong research oriented focus, and is primarily directed towards students planning on completing a doctoral degree or working in an industrial research setting. All students enrolled in the B.S./M.S. program are required to complete a graduate thesis and conduct scholarly research. Students are required to complete two courses Math I, Math II, and must select one focus area from among three offered. Each student must then complete three core courses specified in their selected focus area. Students desiring to enter the B.S./M.S. program are required to be accepted for thesis work by a graduate advisor, and prepare a formal thesis proposal, with a comprehensive literature review, prior to admission into the B.S./M.S. program. Students considering the B.S./M.S. program may take a "Research Methods" class in fall of their fourth year to begin working on their literature review and identify a thesis topic. Students must complete an acceptable thesis proposal and literature review by the end of Fall of their fourth year to be eligible for the B.S./M.S. program.

The mechanical engineering department offers three focus areas: **Mechanics and Design Focus:** Engineering Vibrations, Advanced Mechanics of Solids, Finite Elements; **Systems and Controls Focus:** Signal Processing, Systems Modeling, Control Systems; **Thermo/Fluids Focus:** Ideal Flows, Convective Phenomena, Introduction to Computational Fluid Dynamics.

Sample Course Outline for B.S./M.S. Students (230 quarter credit hours)

Year	Fall	Winter	Spring	Summer
1	classes	Classes	classes	vacation
2	classes	Classes	classes Math Eng. I [4] <**or**> L.A. Core 5 Grad Seminar [0]	co-op #1
3	Thermodynamics [4] Machine Elements [4] Numer. Methods [4] Math for Eng. I [4] <**or**> L.A. Core 5 Grad Seminar [0]	Co-op #2	Fluid Mech. [4] Intro. to EE [4] Adv.Comp.Tech [4] T/F Lab 1 [1] Tech. Elec. 1 [4] Grad Seminar [0]	co-op #3
4	Heat Transfer [4] System Dynamics [5] Transport Phen. [4] Grad Elec. 1 (Res. Methods) [4] Grad Seminar [0]	L.A. Core 6 [4] Science Elec. [4] Senior Seminar [2] Math for Eng. II [4] Senior Design I [4] Grad Seminar [0]	T/F Lab 2 [1] Tech. Elec. 2 [4] Tech. Elec. 3 [4] L.A. Conc. 1 [4] Senior Design II [4] Grad Seminar [0]	co-op #4 (Research oriented + thesis work)
5	Grad. Core 1 [4] L.A. Conc. 2 [4] Grad. Elec. 2 [4] Thesis [1] Grad Seminar [0]	Grad. Core 2 [4] L.A. Conc. 3 [4] Grad. Elec. 3 [4] Thesis [4] Grad Seminar [0]	Grad. Core 3 [4] Free Elective [4] Thesis [4] Grad Seminar [0]	Continuation of Thesis Research Work
6	Defend Thesis and Job Search		Deadline to complete all BS and MS Requirements	

Students in the B.S./M.S. program are expected to complete the requirements for the two degrees no later than fall of their sixth year, ***including defense of their thesis.*** An extension to complete the M.S. portion of the dual degree program may be granted on a case-by-case basis. The extension, however, cannot extend beyond May 15th of the sixth program year. Students not completing all requirements for both degrees by May 15th of year 6 will automatically be separated from the dual degree program, and must take 12 additional credits of graduate course work to complete the Master's degree.