RECEIVED OCT 0 5 2006

MEMORANDUM

To: **Undergraduate Council**

[redacted] 10/5/06

From: **Dr. Frank J. "Fritz" Claydon, Professor of Electrical & Computer Engineering, Associate Dean for Undergraduate and Computer Facilities**

Re: **Updated Biomedical Engineering Degree Plan**

APPROVED DEC 0 6 2006

Attached you will find the latest undergraduate Biomedical Engineering degree plan. There have been major changes made to the 2005-2007 degree plan. Courses that have been added and/or updated are in bold and highlighted, while courses no longer a part of the degree plan have been marked through. The most dramatic change is the addition of three third and fourth year options—1) Biomedical Analysis and Design Option, 2) Biomolecular and 3) Neuroengineering.

Bachelor of Science in Biomedical Engineering

Biomedical engineering majors must earn a grade of C– or better in all engineering, mathematics, and science courses, including courses considered for transfer credit.

After attempting at least six hours within the major, if the cumulative major GPA is below 2.25, the student is placed on probation.

Once on probation, in the next semester(s), the semester major GPA is evaluated. If the semester major GPA is greater than or equal to 2.25, but the cumulative major GPA is below 2.25 the student continues on probation. If the semester major GPA is below 2.25 the student is suspended.

Hours in the major include all BIOE courses plus ECE 1331, CHEE 2331, ECE 2100, ECE 2300, ECE 3337*, and ECE 3455*.

Neuroengineering Option only

Updated

[13] Electives can be chosen from any BIOE 5000-level course, with the approval of the Undergraduate advisor. BIOE 6000-level course, or an appropriate course outside of BIOE may be considered.

BIOE - First Year

Fall Semester	Hours
BIOL 1361: Introduction to Biological Science	3
BIOL 1161: Introduction to Biological Science Laboratory	1
CHEM 1331: Fundamentals of Chemistry	3
CHEM 1111: Fundamentals of Chemistry Laboratory	1
ENGL 1303: Freshman Composition I **or** ENGL 1309: English Composition for Nonnative Speakers I	3
MATH 1431: Calculus I	4
BIOE 1100: Introduction to Biomedical Engineering	1
Total	**16**

Spring Semester	Hours
CHEM 1332: Fundamentals of Chemistry	3
CHEM 1112: Fundamentals of Chemistry Laboratory	1
BIOL 1362: Introduction to Biological Science	3
BIOL 1162: Introduction to Biological Science Laboratory	1
ECE 1331: Computers and Problem Solving	3
MATH 1432: Calculus II	4
PHYS 1321: Physics I	3
Total	**18**

BIOE - Second Year

Fall Semester	Hours
CHEM 3331: Organic Chemistry I	3
CHEM 3221: Organic Chemistry I Laboratory	2
MATH 2433: Calculus III	4
PHYS 1322: Physics II	3
BIOE 2150: Biosensors	1
ENGL 1304: Freshman Composition II or ENGL 1310: English Composition for Nonnative Speakers	3
Total	**16**

Spring Semester	Hours
ECE 2300: Circuit Analysis	3
ECE 2100: Circuit Analysis Laboratory	1
HIST 1377: The United States to 1877	3
CHEE 2331: Chemical Processes	3
MATH 3321: Engineering Math	3
BIOE 2350: Biomechanics	3
Total	**16**

Students must choose one of the three options for years three and four:

Third and Fourth Year, Biomedical Analysis and Design Option

Fall Semester	Hours
Visual and Performing Arts Core Course	3
BIOE 3340: Quantitative Physiology	3
INDE 2333: Engineering Statistics I	3
HIST 1378: The United States Since 1877	3
ENGI 2304: Technical Communications	3
Total	**15**

Spring Semester	Hours
BIOE 3350: Biosensors II	3
BIOE 4324: Advanced Biomechanics	3
BIOE 3440: Biothermodynamics and Fluids	4
BCHS 3304: General Biochemistry I	3
POLS 1336: U.S. and Texas Constitutions and Politics	3
Total	**16**

Fall Semester	Hours
BIOE 4323: Fundamentals of Tissue Engineering	3
BIOE 4455: Bioanalytics	4
BIOE Technical Elective [13]	3
POLS 1337: U.S. Government: Congress, President, and Courts	3
BIOE 4312: Computational Fluid Dynamics I	3
Total	**16**

Spring Semester	Hours
BIOE 4325: Engineering Principles Applied to Biological Systems	3
BIOE Technical Elective [13]	3
BIOE 4334: Capstone Design	3
Social Science Core Course	3
Humanities Core Course	3
Total	**15**
Degree Total:	**128**

Third and Fourth Year, Biomolecular Option

Fall Semester	Hours
Visual and Performing Arts Core Course	3
BIOE 3340: Quantitative Physiology	3
INDE 2333 Engineering Statistics I	3
HIST 1378 The United States Since 1877	3
ENGI 2304 Technical Communications	3
Total	**15**

Spring Semester	Hours
BIOE 3350: Biosensors II	3
BIOE 3440: Biothermodynamics and Fluids	4
BCHS 3304: General Biochemistry I	3
POLS 1336: U.S. and Texas Constitutions and Politics	3
BIOE Technical Elective [13]	3
Total	**16**

Fall Semester	Hours
BIOE 4393 Cellular and Biological Transport Phoenomena	3
BIOE 4455: Bioanalytics	4
BIOE 4323: Fundamentals of Tissue Engineering	3
BIOE 4366: Biomolecular Engineering	3
POLS 1337: U.S. Government: Congress, President, and Courts	3
Total	**16**

Spring Semester	Hours
BIOE Technical Elective [13]	3
BIOE 4334: Capstone Design	3
BIOE 4394: Transport Phenomena in Physiological Systems	3
Social Science Core Course	3
Humanities Core Course	3
Total	**15**
Degree Total:	**128**

Third and Fourth Year, Neuroengineering Option

Fall Semester	Hours
ECE 3337: Engineering Analysis I	3
BIOE 3340: Quantitative Physiology	3
BCHS 3304: General Biochemistry I	3
INDE 2333: Engineering Statistics I	3
ENGI 2304: Technical Communications	3
Total	**15**

Spring Semester	Hours
BIOE 3350: Biosensors II	3
ECE 3455: Electronics	4
POLS 1336: U.S. and Texas Constitutions and Politics	3
BIOE 3440: Biothermodynamics and Fluids	4
BIOL 4315: Neuroscience	3
Total	**17**

Fall Semester	Hours
BIOE Technical Elective [13]	3
Visual/Performing Arts Core Course	3
BIOE 3366: Introduction to Digital Signal Processing	3
BIOE 4458: Bioinstrumentation	4
HIST 1378: The United States Since 1877	3
Total	**16**

Spring Semester	Hours
BIOE Technical Elective [13]	3
BIOE 4334: Capstone Design	3
Social Science Core Course	3
Humanities Core Course	3
POLS 1337: U.S. Government: Congress, President, and Courts	3
Total	**15**

Degree Total: **129**

Last Updated by mjs:
Wednesday September 27, 2006 by mjs 10:22AM