

B.S. in Biological Engineering – Fall 2008 and After**Year One**

| Fall Semester | | Spring Semester | |
|-------------------------------|---------------------|-------------------------------|---------------------|
| Course | Credit Hours | Course | Credit Hours |
| ENGR 1120 Graphics and Design | 3 | PHYS 1211 & L Physics I | 4 |
| ENGR 1140 Comp. Methods | 2 | BIOL 1107 & L Biology I | 4 |
| ENGL 1101 English Comp. I | 3 | CHEM 1212 & L Chemistry II | 4 |
| CHEM 1211 & L Chemistry I | 4 | MATH 2260 - Integral Calculus | 4 |
| MATH 2250 Calculus I | 4 | | |
| Total Credit Hours | 16 | Total Credit Hours | 16 |

Year Two

| Fall Semester | | Spring Semester | |
|------------------------------|---------------------|------------------------------------|---------------------|
| Course | Credit Hours | Course | Credit Hours |
| ENGR 2120 Statics | 3 | ENGR 2110 Engr. Dec. Making | 3 |
| BIOL 1108 & L Biology II | 4 | ENGR 3160 Fluid Mechanics | 3 |
| PHYS 1212 & L Physics II | 4 | ENGR 2140 Str. of Matls. <i>or</i> | 3 |
| MATH 2500 – Calculus III | 3 | ENGR 2170 Electrical Circuits | |
| ENGL 1102 - English Comp. II | 3 | ENGR 2920 Engr. Design Meth. | 2 |
| | | MATH 2700 Diff. Equations | 3 |
| | | CHEM 2211 & L Organic Chemistry | 4 |
| Total Credit Hours | 17 | Total Credit Hours | 18 |

Year Three

| Fall Semester | | Spring Semester | |
|------------------------------|---------------------|-----------------------------------------|---------------------|
| Course | Credit Hours | Course | Credit Hours |
| ENGR 3140 Thermodynamics | 2 | ENGR 2170 Electrical Circuits <i>or</i> | 3 |
| ENGR 3150 Heat Transfer | 3 | ENGR 2140 Str. of Matls | |
| ENGR 3520 Mass Tran/Rate | 3 | ENGR Area of Emphasis | 3 |
| MIBO 3500 Intro Microbiology | 3 | ENGR Area of Emphasis | 3 |
| BCMB 3100 Intro Biochemistry | 3 | World Language & Culture | 3 |
| ENGR Area of Emphasis* | 3 | POLS 1101 Political Science | 3 |
| Total Credit Hours | 17 | Total Credit Hours | 15 |

Year Four

| Fall Semester | | Spring Semester | |
|---------------------------------|---------------------|---------------------------|---------------------|
| Course | Credit Hours | Course | Credit Hours |
| Science Elective** | 3 | ENGR 4920 Engr. Design | 4 |
| ENGR Area of Emphasis | 3 | ENGR Area of Emphasis | 3 |
| ENGR Area of Emphasis | 3 | World Language & Culture | 3 |
| SPCM 1100 Intro Public Speaking | 3 | World Language & Culture | 3 |
| HIST 2111/2112 American History | 3 | Social Science Elective | 3 |
| Total Credit Hours | 15 | Total Credit Hours | 16 |

*Select 18 hours of Area of Emphasis courses (see attached lists)

****Science Elective:** Suggested courses include BCMB(CHEM) 4110; BCMB(ENTO) 4200; CBIO(BIOL) 3400; CBIO(MIBO) 4100; CRSS 4600 & L; ECOL(BIOL) 3500-3500L; MIBO 4090; VPHY 3100

Environmental Area of Emphasis

Required Area of Emphasis Courses – 12 Credit Hours

ENGR 3410 Intro to Natural Resource Engineering
ENGR 3440 Water Management
ENGR 4440 Environmental Engineering Unit Operations
ENGR 4450 Environmental Engineering Remediation Design

Elective Area of Emphasis Courses – Choose 2 courses (6 credit hours)

ENGR 3420 Soil Mechanics
ENGR 4140 Intro to Systems Modeling
ENGR 4460 Design of Natural Wastewater Treatment Systems
ENGR 4660 Sustainable Building Design
CRSS 3060 Hydrology and Soils *or* WASR 4500 Quantitative Methods in Hydrology

Biochemical Area of Emphasis

Required Area of Emphasis Courses – 12 Credit Hours

ENGR 4230 Sensors and Transducers
ENGR 4510 Biochemical Engineering
ENGR 4520 Design of Biochemical Separations Processes
ENGR 4650 Structural Environments I

Elective Area of Emphasis Courses – Choose 2 courses (6 credit hours)

ENGR 3540 Physical Units Operation
ENGR 4140 Intro to Systems Modeling
ENGG 4615 Soft Materials

Biomedical Area of Emphasis

Required Area of Emphasis Courses – 12 Credit Hours

Biomechanics Track

ENGR 3720 Engineering Physiology
ENGR 4760 Biomechanics
ENGR 4230 Sensors and Transducers
ENGR 4740 Biomaterials

Instrumentation Track

ENGR 3720 Engineering Physiology
ENGR 4210 Linear Systems
ENGR 4230 Sensors and Transducers
ENGR 4740 Biomaterials

Elective Area of Emphasis Courses – Choose 2 courses (6 credit hours)

Biomechanics Track

ENGR 3610 Structural Design
ENGR 4350 Finite Elements
ENGR 4650 Structural Environments I
ENGG 4620 Biomedical Imaging (*formerly CSEE 4620*)

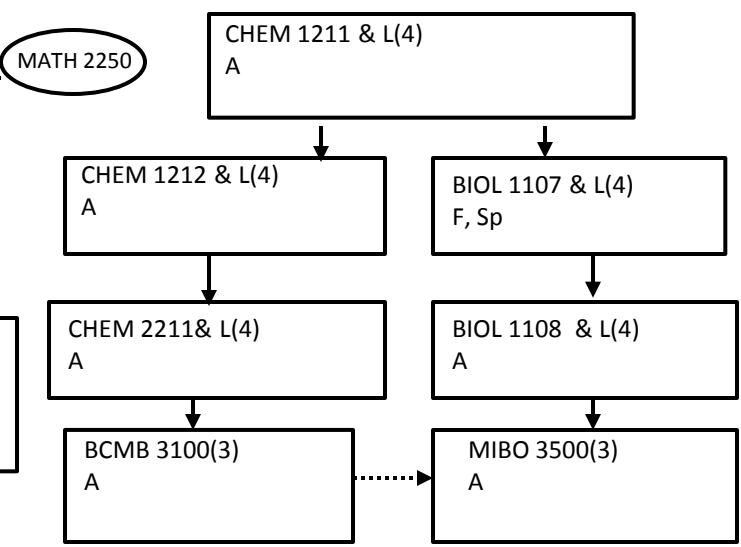
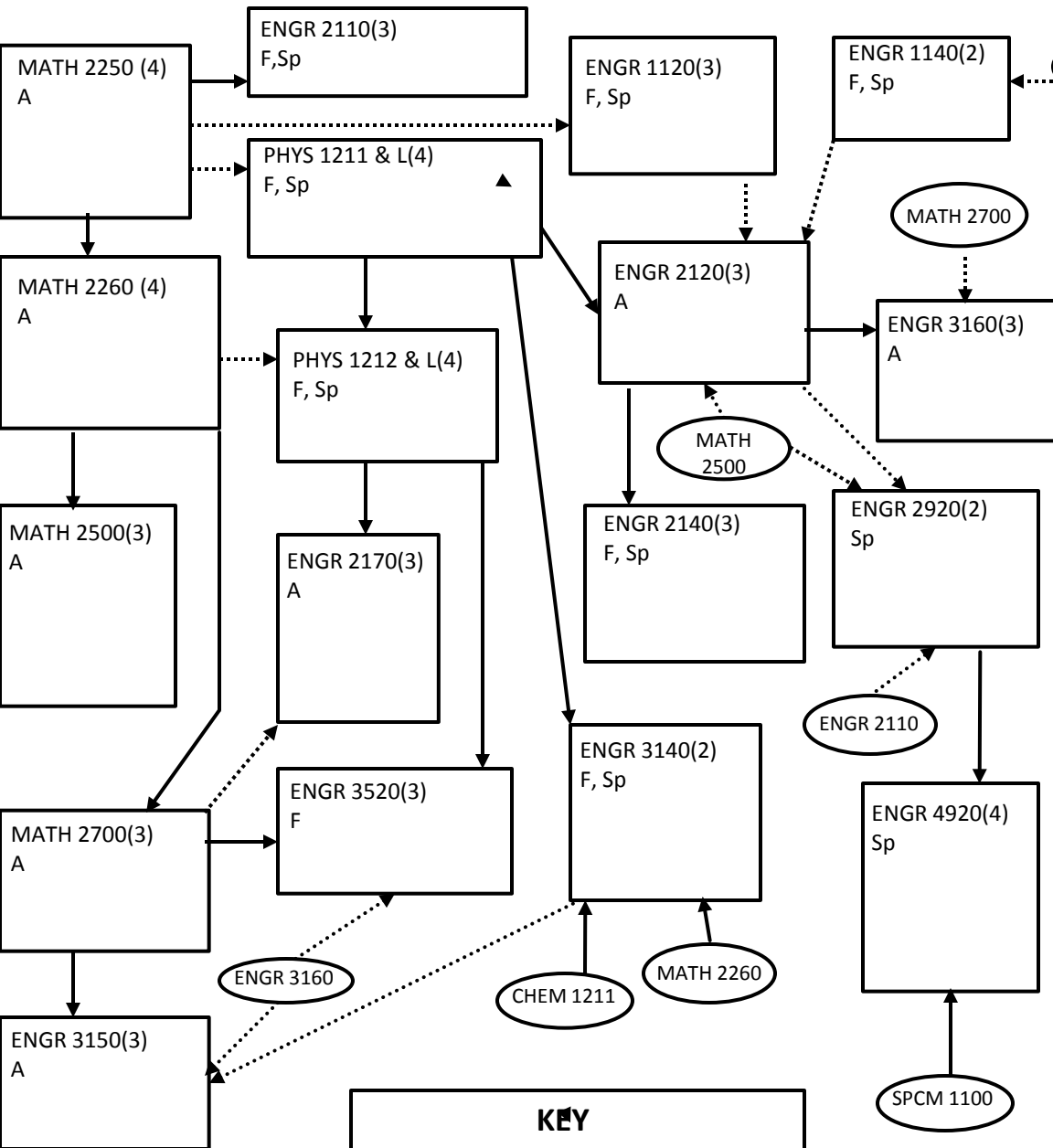
Instrumentation Track

ENGR 3270 Electronics
ENGR 4140 Intro to Systems Modeling
ENGR 4240 Intro to Microcontrollers
ENGR 4260 Intro to Nanoelectronics
ENGG 4620 Biomedical Imaging (*formerly CSEE 4620*)

Name _____

BSBE Flow Chart

Area of Emphasis _____



Area of Emphasis (18 hrs)
Biomedical (Choose either Biomechanics *OR* Instrumentation Track)

ENGR 3720 _____ ENGR 4230 _____

ENGR 4740 _____

ENGR 4760 _____ *Biomechanics*

ENGR 4210 _____ *Instrumentation*

*Electives _____

*Must be selected from appropriate Track

Environmental

ENGR 3410 _____ ENGR 4440 _____

ENGR 3440 _____ ENGR 4450 _____

Electives _____

Biochemical

ENGR 4230 _____ ENGR 4520 _____

ENGR 4510 _____ ENGR 4650 _____

Electives _____

KEY

Prerequisite \longrightarrow Pre or Co-requisite $\cdots\cdots\longrightarrow$

Course shown elsewhere

Science Elective

ENGLISH (6)

ENGL 1101(3)
A



ENGL 1102(3)
A

HUMANITIES & THE ARTS (3)

SPCM 1100

WORLD LANGUAGES & CULTURE (9)*

1. _____
2. _____
3. _____

SOCIAL SCIENCES (9)*

1. _____
2. _____
3. _____

•Select **one** course to satisfy Cultural Diversity requirement

SCIENCE ELECTIVE

Select any Biology or Ecology course at the 3000 level or above. The following courses are preferred:

BCMB(CHEM) 4110; BCMB(ENTO) 4200; CBIO(BIOL) 3400; CBIO(MIBO) 4100; CRSS 4600-4600L; ECOL(BIOL) 3500-3500L; MIBO 4090; VPHY 3100

HIST 2111 or HIST 2112 Satisfies History Requirement
POLS 1101 Satisfies US and GA Constitution Requirement

*** Special Note to Students Following the Biomedical Area of Emphasis: You must choose EITHER the Biomechanics OR the Instrumentation Track for this Area of Emphasis. However, you may choose to have NO Area of Emphasis and take courses from both tracks.**