BIOENGINEERING
Bioelectrical Concentration

Student: __________________________
Date: __________________________
CUID: __________________________
Advisor: _________________________

FRESHMAN YEAR

4 CH 1010 General Chemistry
3 ENGL 1030 Accelerated Composition
2 ENGR 1020 Engineering Discipline and Skills
3 MATH 1060 Calculus of One Variable I
3 Gen Ed1___________________________
16

SOPHOMORE YEAR

3 BIOE 2010 Intro. to Biomedical Engineering
2 ECE 2010 Logic and Computing Devices
3 ECE 2020 Electric Circuits I
1 ECE 2090 Logic and Computing Devices Lab
1 ECE 2110 Electrical Engineering Lab. I
4 MATH 2060 Calculus of Several Variables
3 PHYS 2210 Physics with Calculus II
17

JUNIOR YEAR

4 BIOL 3150 Functional Human Anatomy
3 CH 2010 Survey of Organic Chemistry
1 CH 2020 Survey of Organic Chemistry Lab
1 ECE 3110 Electrical Engineering Lab. II
3 ECE 3200 Electronics I
3 ECE 3300 Signals, Systems, and Transforms
15

SENIOR YEAR

3 BIOE 3200 Biomechanics
3 BIOE 4010 Bioengineering Design Theory
3 BIOE 4610 Cell Biology
3 Gen Ed1___________________________
3 BIOE or ECE Technical Requirement3______________
15

18

128 Total Semester Hours

General Education Requirements

<table>
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<tr>
<th>LIT</th>
<th>Non-Lit</th>
<th>SS1</th>
<th>SS2</th>
<th>STS</th>
<th>CCA</th>
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<tbody>
<tr>
<td>LIFE</td>
<td>Palmetto Fellows</td>
<td>Honors</td>
<td>Athlete</td>
<td>RISE</td>
<td>ROTC</td>
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3See the policy on Humanities and Social Sciences for Engineering Curricula. Six of these credit hours must also satisfy General Education Cross-Cultural Awareness and Science and Technology in Society Requirements.

3Students planning to enter medical school should take CH 2230/2270 instead of CH 2010/2020 and CH 2240/2280 as an additional course sequence. Students planning to enter medical school should also take physics laboratories as additional courses (PHYS 1220 course with PHYS 1240 lab and PHYS 2210 course with PHYS 2230 lab). Recommended Gen. Ed. Social Sciences: PSY 2010 and SOC 2010.

3Select from department-approved list (BIOE 1010, BIOL 1030/1050, BIOI 1100/1101).

**Notes**

1. To transfer from General Engineering into the Bioengineering degree program, students must have a minimum cumulative grade-point average of 3.0 in courses taken at Clemson and must have earned a C or better in each course in the General Engineering freshman curriculum, including the Arts and Humanities/Social Science Requirements.
2. A student is allowed to enroll in ECE courses (excluding ECE 2070, 2080, 3080) only when all prerequisites have been passed with a grade of C or better.
3. All Bioelectrical Concentration students must have a cumulative engineering grade-point average of 2.0 to enroll in any 3000- or 4000-level ECE courses.
4. No student may exceed a maximum of two attempts, excluding a W, to successfully complete any ECE course.

Comments:

____________________________________________________________________________________________________________________________________________________
____________________________________________________________________________________________________________________________________________________
____________________________________________________________________________________________________________________________________________________

Change of Major Checklist

<table>
<thead>
<tr>
<th>Required</th>
<th>Completed</th>
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<tbody>
<tr>
<td>CH 1010</td>
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<tr>
<td>CH 1020</td>
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<tr>
<td>ENGR 1020</td>
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<td>ENGR 1410</td>
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<td>MATH 1060</td>
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<td>MATH 1080</td>
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<tr>
<td>PHYS 1220</td>
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GPA = 3.0; C or Better Required in Each Class
2016 – 2017 General Education Worksheet for Engineering

C. Arts and Humanities: Literature [Lit] .................................................................3 credits

ENGL 2020, 2120, 2130, 2140, 2150, CHIN 4010, GER 2600, HON 1900, 2210, JAPN 4010, RUSS 3600, 3610

Literature taught in a foreign language: FR 3000, 3040, GER 3060, 3600, 3610, ITAL 3010, 3020, JAPN 4060, SPAN 3040, 3110, 3130

C. Arts and Humanities: Non-Literature [NL] .......................................................3 credits

AAH 1010, ART 2100CA, 3750, ASL 3050CA, CAAH 2010CA, CHIN (PHIL) 3120, (PHIL) 3130, 4990, COMM 1800CA, 3030, 3080, 3090, 4020,
ENG (GW) 3010, 3550, 3570, ENGL (LANG) 4540, FR 3070, GW (ENGL) 3010, 4050, GER 3400, HON 1910, 2010ST, 2030, 2100, 2220, HUM 3010, 3020,
HUM 3060, 3090CA, JAPN 3070, 3080, LANG 3400, 3420, (ENGL) 4540, LARC 1160ST, MUSC 2100CA, 3080, 3090, 3110, 3120, 3130, 3140CA,
MUSC 3170, 3610, 3620, 3630, 3640, 3690, 3700, 3710, 3720, PHIL 1010, 1020, 1030, 1240ST, 2100ST, (CHIN) 3120, (CHIN) 3130, 3160, 3170, 3180,
PHIL 3230, 3240ST, 3250, 3260ST, 3270, 3440, 3450ST, REL 1010CA, 1020CA, 3010, 3020, 3030, 3060, 3070, 3090, 3120, 3130, 3150,
RUSS 3400, SPAN 3070, 3080, STS 1010ST, 1020ST, 2150ST, 3010ST, 3030ST, THEA 2100, 2790, 3080, 3090, THEA 3150, 3160, 3170, WS 3010

D. Social Sciences [SS] .........................................................................................6 credits

AGRB 2020, ANTH 2010CA, ECON 2000, 2110, 2120, GEOG 1010, 1030CA, 1060, HIST 1010, 1020, 1220ST, 1240ST, 1720CA, 1730CA, 1930CA,
HON 1920, 2020, 2200, PAS 3010CA, POSC 1010, 1020CA, 1030, 1040CA, PSYC 2010, 2500CA, 2750ST, RS 3010, SOC 2010, 2020

E. Cross-Cultural Awareness [CCA] .................................................................3 credits

AAH 1020, AGRB 2050ST, ANTH 2010NL, ART 2100NL, ASL 3050NL, CAAH 2010NL, COMM 1800NL, GEOG 1030SS, HIST 1720SS, 1730SS, 1930SS,
HON 1930, 2090, HUM 3090NL, IS 1010, 2100, LANG 2500, 2540, MUSC 2100NL, 3140NL, PAS 3010SS, POSC 1020SS, 1040SS, PSYC 2500SS,
REL 1010NL, 1020NL, WS 1030, or through a University-approved cross-cultural experience

F. Science and Technology in Society [STS] .......................................................3 credits

AGED (EDF) 4800, AGRB 2050CA, (ECON) 4570, AVS 3150, 4150, BIOL 2000, 2010, 2030, 2040, 2100, 2110, 2200, 4730, CH 1050, 1060, COMM 1070,
COMM 3070, CPSC 2920, CTE 1150, 2210, ECE 1010, ECON 3190, (AGRB) 4570, ENGL 3490, ENGR 2200, 2210, ENR 3120, (FOR) 4160,
ENSP (GEOL) 1250, 2000, (PES) 3150, ENSP 4000, ENT 2000, FDSC 2140, FOR (ENR) 4160, GEOL 1120, 1200, (ENSP) 1250, 2700, 3000,
HCG (NURS) 3330, HIST 1220SS, 1240SS, 3210, 3220, 3230, 3920, 4240, 4910, HLTH 4310, HON 1940, 2010NL, 2060, IE 4880, LARC 1160NL,
MUSC 3180, NURS 1400, (HCG) 3330, NUTR 2030, 2100, PES (ENSP) 3150, PHIL 1240NL, 2100NL, 3240NL, 3260NL, 3280, 3400, 3450NL,
PHYS 2450, PKSC 3680, PLPA 2130, PRMT 2110, PSYC 2750SS, RS (SOC) 4010, SOC (RS) 4010, 4030, STAT 2220, STS 1010NL, 1020NL, 1200, 1710,
2150NL, 2160, STS 3010NL, 3030NL, 4980, 4990

Additional A&H/SS Requirement [**5th and ***6th] ..............................................as required by engineering major

Any 1000 – 4999 course in the following rubrics: AAH, ANTH, ARAB, ART, ASL, CHIN, DANC, ECON, FR, GEOG, GER, GW, HIST, HUM, ITAL, JAPN, LANG, LAW, MUSC, PA, PAS, PHIL, PORT, POSC, PSYC, REL, RS, RUSS, SOC, SPAN, THEA, WS

Rubrics with exceptions for additional requirement: AGRB 1000-2999, CAAH 2010, COMM [except 1500, 2500], EAS 1230, ENGL 2000-4999 [except 2170, 3040, 3100, 3120,
extcept ENGL 3140, 3150, 3160, 3330], HON 1900, 1910, 1920, 2010, 2020, 2030, 2100, 2220, 2210, 2220, IS 2100, STS 1010, 1020, 3030

**Additional course (5th) only required by CHE, ENVE, ME and MSE. CPE and EE require the additional 5th or a technical elective.

**BioE, BE, CE and IE do not require 5th.

BOLD indicates no pre-reqs required

Underline indicates MUSC courses require auditions, are 1 hour, may be repeated or grouped to achieve credit required.

This is an unofficial document: Responsibility for satisfying these requirements rests with the student. Evaluation based on catalog year 2016 – 2017

Updated – June 9, 2016