

CURRICULUM SHEETS FOR
BIOMEDICAL, CHEMICAL AND ENVIRONMENTAL ENGINEERING
MS-BS AND GRADUATE PREPARATION (GPST) S-STEM TRACKS

BIOMEDICAL ENGINEERING (BME)
S-STEM BS+MS and GSPT Changes Indicated

Fall 2014 CHEM 1040 Gen Chemistry I 4 CHEM 1040L Gen Chem Lab I 1 ENED 1020 Engrg Foundations 2 ENED 1090 Engineering Models I 2 ENGL 1001 English Composition 3 MATH 1061 Calculus I 4 Total SH 16	Spring 2015 CHEM 1041 Gen Chemistry II 4 CHEM 1041L Gen Chem Lab II 1 ENED 1030 Statics & BSOM 3 ENED 1091 Engineering Models II 2 MATH 1062 Calculus II 4 PD 1011 COOP for CEAS 1 Total SH 15	Summer 2015 <p style="text-align: center;">OFF</p>
Fall 2015 BoK 3 BIOL 1081 Biology 1 3 BIOL 1081L Biology I Lab 1 BME 2000C BME in the Clinic 3 ENVE 2093C Engr Apps of Diff Eqns 2 MATH 2074 Dynamical Systems 3 COOP 2011 Practice Evaluation Total SH 15	Spring 2016 <p style="text-align: center;">Cooperative Education Work Semester</p>	Summer 2016 BOK 3 BME 2010 Research Methods 3 TECH ELEC 3 BME 3071C Basic Electric Circuits 4 ENVE 4051 Stats & Reliability 3 COOP 2012 Practice Evaluation Total SH 16
Fall 2016 <p style="text-align: center;">Cooperative Education Work Semester</p>	Spring 2017 BOK 3 BME Focus Elective 3 TECH ELEC 3 BME 3020C Sensing & Measure. 4 ENGL 2089 Intermediate Comp. 3 COOP 3011 Practice Evaluation ENFD 3020 Undergrad Res I 2 Total SH 18	Summer 2017 <p style="text-align: center;">Cooperative Education Work Semester</p>
Fall 2017 BOK 3 BME Focus Elective 3 TECH ELEC 3 BME 4020C Control & Lab. 4 PD 4001 Prof. Development 1 COOP 4011 Practice Evaluation ENFD 4020 Undergrad Res II 1 Total SH 15	Spring 2018 <p style="text-align: center;">Cooperative Education Work Semester</p>	Summer 2018 ENFD 5030 Prep Grad Research 1-12 <p style="text-align: center;">OR</p> ENFD 5020 Undergrad Res III 1-12 Other Coursework 0-11 Total SH 12
Fall 2018 SELE ELEC 3 SELE ELEC 3 BME ELEC 4 BME 5001 BME Sr. Capstone 6 COOP 4012 Practice Evaluation Total SH 16	Spring 2019 SELE ELEC 3 TECH-PROF ELEC 3 BME 5001 BME Sr. Capstone 6 Total SH 12	

BOK = Breadth of Knowledge -- General Education Requirements

UC's College of Engineering and Applied Science BOK requirements are as follows:

Take one course from any two of the following

- FA Fine Arts
- HP Historical Perspectives
- HU Humanities
- SS Social Sciences

AND Take one course from each of the following

- DC Diversity and Culture
- SE Social and Ethical Issues

CHEMICAL ENGINEERING (CHE)
Section 1: S-STEM BS+MS and GSPT Changes Indicated

Fall 2014 CHEM 1040 Gen Chemistry I 4 CHEM 1040L Gen Chem Lab I 1 ENED 1020 Engrg Foundations 2 ENED 1090 Engineering Models I 2 ENGL 1001 English Composition 3 MATH 1061 Calculus I 4 Total SH 16	Spring 2015 CHEM 1041 Gen Chemistry II 4 CHEM 1041L Gen Chem Lab II 1 ENED 1030 Statics & BSOM 3 ENED 1091 Engineering Models II 2 MATH 1062 Calculus II 4 PD 1011 COOP for CEAS 1 Total SH 15	Summer 2015 OFF
Fall 2015 Cooperative Education Work Semester	Spring 2016 CHE 4075 Research Methods 3 CHE 2064 Matl & Energy Balance 4 CHEM 2040 Organic Chemistry.... 4 CHEM 2040L Organic Chem Lab 1 ENVE 2093C Engr Apps of Diff Eqns 2 MATH 2074 Dynamical Systems 3 COOP 2011 Practice Evaluation Total SH 15	Summer 2016 Cooperative Education Work Semester
Fall 2016 BME 3071C Basic Electric Circuits 4 CHE 3022 Transport I 4 CHEM 2041 Organic Chemistry II 4 CHEM 2041L Organic Chem Lab II 1 ENVE 4051 Stats & Reliability 3 COOP 2012 Practice Evaluation Total SH 16	Spring 2017 Cooperative Education Work Semester	Summer 2017 BoK 3 BoK 3 CHE 3023 Transport II 3 CHE 3062 Chem Engn Thermo. 4 ENGL 4092 Technical Writing 3 COOP 3011 Practice Evaluation CHE 4075 Undergrad Res I 2 Total SH 18
Fall 2017 Cooperative Education Work Semester	Spring 2018 TECH ELEC 3 CHE 4075 Undergrad Res II 1 CHE 4001 UG Seminar 4 CHE 4061 Separation Processes 3 CHE 4062 Chem React Engn 3 CHE 4071 Proc Dynam/Control 3 PD 4001 Prof. Development 1 COOP 4011 Practice Evaluation Total SH 14	Summer 2018 ENFD 5030 Prep Grad Research 1-12 OR ENFD 5020 Undergrad Res III 1-12 Other Coursework 0-11 Total SH 12
Fall 2018 BoK 3 CHE 4037 ChE Lab 4 CHE 5045 Proc Design I 4 CHE 5082 Ind Chem Processes 3 CHEM 3030 Instrumental Analysis 3 COOP 4012 Practice Evaluation 2 Total SH 17	Spring 2019 BoK 3 TRACK ELEC 3 TRACK ELEC 3 CHE 5046 Proc Design II 4 CHE 4001 UG Seminar 1 CHEM 3030L Instrument Anal Lab. 2 Total SH 16	

BOK = Breadth of Knowledge -- General Education Requirements

UC's College of Engineering and Applied Science BOK requirements are as follows:

Take one course from any two of the following

FA	Fine Arts	Implementation of S-STEM
HP	Historical Perspectives	Curriculum changes from CHE faculty
HU	Humanities	
SS	Social Sciences	

AND Take one course from each of the following

DC	Diversity and Culture
SE	Social and Ethical Issues

CHEMICAL ENGINEERING (CHE)
Section 2: S-STEM BS+MS and GSPT Changes Indicated

Fall 2014	Spring 2015	Summer 2015
CHEM 1040 Gen Chemistry I 4 CHEM 1040L Gen Chem Lab I 1 ENED 1020 Engrg Foundations 2 ENED 1090 Engineering Models I 2 ENGL 1001 English Composition 3 MATH 1061 Calculus I 4 Total SH 16	CHEM 1041 Gen Chemistry II 4 CHEM 1041L Gen Chem Lab II 1 ENED 1030 Statics & BSOM 3 ENED 1091 Engineering Models II 2 MATH 1062 Calculus II 4 PD 1011 COOP for CEAS 1 Total SH 15	OFF
Fall 2015 CHE 4075 Research Methods 3 CHE 2064 Matl & Energy Balance 4 CHEM 2040 Organic Chemistry.... 4 CHEM 2040L Organic Chem Lab 1 ENVE 2093C Engr Apps of Diff Eqns 2 MATH 2074 Dynamical Systems 3 COOP 2011 Practice Evaluation Total SH 15	Spring 2016 Cooperative Education Work Semester	Summer 2016 BME 3071C Basic Electric Circuits 4 CHE 3022 Transport I 4 CHEM 2041 Organic Chemistry II 4 CHEM 2041L Organic Chem Lab II 1 ENVE 4051 Stats & Reliability 3 COOP 2012 Practice Evaluation Total SH 16
Fall 2016 Cooperative Education Work Semester	Spring 2017 BoK 3 BoK 3 CHE 3023 Transport II 3 CHE 3062 Chem Engr Thermo. 4 ENGL 4092 Technical Writing 3 COOP 3011 Practice Evaluation CHE 4075 Undergrad Res I 2 Total SH 18	Summer 2017 Cooperative Education Work Semester
Fall 2017 TECH ELEC 3 CHE 4075 Undergrad Res II 1 CHE 4001 UG Seminar 4 CHE 4061 Separation Processes 3 CHE 4062 Chem React Engr 3 CHE 4071 Proc Dynam/Control 3 PD 4001 Prof. Development 1 COOP 4011 Practice Evaluation Total SH 14	Spring 2018 Cooperative Education Work Semester	Summer 2018 ENFD 5030 Prep Grad Research 1-12 OR ENFD 5020 Undergrad Res III 1-12 Other Coursework 0-11 Total SH 12
Fall 2018 BoK 3 CHE 4037 ChE Lab 4 CHE 5045 Proc Design I 4 CHE 5082 Ind Chem Processes 3 CHEM 3030 Instrumental Analysis 3 COOP 4012 Practice Evaluation Total SH 17	Spring 2019 BoK 3 TRACK ELEC 3 TRACK ELEC 3 CHE 5046 Proc Design II 4 CHE 4001 UG Seminar 1 CHEM 3030L Instrument Anal Lab. 2 Total SH 16	

BOK = Breadth of Knowledge -- General Education Requirements

UC's College of Engineering and Applied Science BOK requirements are as follows:

- Take one course from any two of the following
- FA Fine Arts
 - HP Historical Perspectives
 - HU Humanities
 - SS Social Sciences
- AND Take one course from each of the following
- DC Diversity and Culture
 - SE Social and Ethical Issues
- Implementation of S-STEM
 Curriculum changes from CHE faculty

ENVIRONMENTAL ENGINEERING (ENVE)
S-STEM BS+MS and GSPT Changes Indicated

Fall 2014	Spring 2015	Summer 2015
CHEM 1040 Gen Chemistry I 4 CHEM 1040L Gen Chem Lab I 1 ENED 1020 Engrg Foundations 2 ENED 1090 Engineering Models I 2 ENGL 1001 English Composition 3 MATH 1061 Calculus I 4 Total SH 16	CHEM 1041 Gen Chemistry II 4 CHEM 1041L Gen Chem Lab II 1 ENED 1030 Statics & BSOM 3 ENED 1091 Engineering Models II 2 MATH 1062 Calculus II 4 PD 1011 COOP for CEAS 1 Total SH 15	OFF
Fall 2015 CHE 4075 Research Methods 3 BIOL 1081 Biology 1 3 BIOL 1081L Biology I Lab 1 CHE 2064 Matl & Energy Bal 4 ENFD 2000C Grd Challen in Engrn 2 ENVE 2093C Engr Apps of Diff Eqns 2 MATH 2074 Dynamical Systems 3 COOP 2011 Practice Evaluation Total SH 18	Spring 2016 Cooperative Education Work Semester	Summer 2016 CHEM 2040 Organic Chem I 4 CHEM 2040L Organic Chem Lab I 1 CHE 3022 Transport I 4 ENGL 4092 Technical Writing 3 ENVE 4010 Water & Waste 3 ENVE 4010L Envir & Radiolog 2 ENVE 4051 Stats & Reliability 3 COOP 2012 Practice Eval # Total SH 16
Fall 2016 Cooperative Education Work Semester	Spring 2017 CHEM 2040 Organic Chem I 4 CHEM 2040L Organic Chem Lab I 1 CHE 4075 Undergrad Res I 2 CVE 3002C Soil Mech & Lab 4 CHE 3022 Transport I 4 ENVE 3040 C&E System Anal 3 ENVE 4011 Air Pollution Cont 3 COOP 3011 Practice Eval # Total SH 17	Summer 2017 Cooperative Education Work Semester
Fall 2017 CHE 4071 Proc Dynam & Cntl 3 ECON 1001 Economics (BOK) 3 ENVE 4093 Hydraulic Systems 3 ENVE 4093L Flu Mech & Hyd Sy 2 GEOG 6071C Geog Informa Syst 3 PD 4001 Prof. Development 1 CHE 4075 Undergrad Res II 1 COOP 4011 Practice Eval # Total SH 16	Spring 2018 Cooperative Education Work Semester	Summer 2018 ENFD 5030 Prep Grad Research 1-12 OR ENFD 5020 Undergrad Res III 1-12 Other Coursework 0-11 Total SH 12
Fall 2018 BOK 3 BOK 3 ENVE 5001 Capstone Design I 2 ENVE 5003 Capstone Seminar 1 ENVE 6014 Sol & Haz Waste 3 GEOG 6009 Environ Geochem 3 COOP 4012 Practice Eval # Total SH 15	Spring 2019 BoK 3 ENVE ELEC 3 ENVE ELEC 3 ENVE 5002 Capstone Design II 2 ENVE 5004 Capstone Seminar 1 ENVE 6058C Environ Instrumentn 3 Total SH 15	

BOK = Breadth of Knowledge -- General Education Requirements

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- FA Fine Arts
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 - HU Humanities
 - SS Social Sciences
- AND Take one course from each of the following
- DC Diversity and Culture
 - SE Social and Ethical Issues
- Implementation of S-STEM
 Curriculum changes from ENVE faculty