

CIVIL ENGINEERING PLAN OF STUDY

Name _____ Student ID _____ Entered CE _____

FRESHMAN YEAR

FALL		SPRING	
<input type="checkbox"/> CVNG 1010 Freshman Engineering I ¹	1	<input type="checkbox"/> CVNG 1020 Freshman Engineering II ¹ (CVNG 1010)	1
<input type="checkbox"/> CHEM 1110/1115 General Chemistry I w/Lab ²	4	<input type="checkbox"/> CVNG 1500 Civil Engineering Computing (cc CVNG 1020, cc MATH 1510)	3
<input type="checkbox"/> ENGL 1920 Advanced Writing for Professionals ³	3	<input type="checkbox"/> MATH 1520 Calculus II (MATH 1510)	4
<input type="checkbox"/> MATH 1510 Calculus I ⁴	4	<input type="checkbox"/> PHYS 1610 Engineering Physics I (MATH 1510)	3
<input type="checkbox"/> THEO 1000 Theological Foundations	3	<input type="checkbox"/> PHYS 1620 Engineering Physics I Lab (cc PHYS 1610)	1
		<input type="checkbox"/> Humanistic Values Elective ⁵	3
	15		15

1. ESCI or MENG 1010/1020 are acceptable for transfer credit. External transfer students may substitute with equivalent course transferred.
2. Requires one year of high school chemistry with a grade of "C" or better and Pre-Calculus placement. Transfer credit can be given for CHEM 1070/1075.
3. Enrollment in this course is based on your SAT or ACT score in English. Students can take ENGL 1900 in lieu of ENGL 1920.
4. Student must meet the required Math Index before enrolling in MATH 1510 Calculus I.
5. Must be selected from approved departmental list included in page 2 for Humanistic values and page 3 for Cultural Diversity Electives.

SOPHOMORE YEAR

FALL		SPRING	
<input type="checkbox"/> CVNG 2010 GIS and Surveying in Civil Engineering	3	<input type="checkbox"/> MATH/STAT 3850 Foundations of Statistics (Math 2530)	3
<input type="checkbox"/> CVNG 2020 GIS and Surveying Lab	1	<input type="checkbox"/> Math/Science Elective ⁶	3
<input type="checkbox"/> CMM 2200 Small Group Presentation	1	<input type="checkbox"/> ESCI 2150 Dynamics (cc ESCI 2100, MATH 1520)	3
<input type="checkbox"/> Science Elective ⁶	4	<input type="checkbox"/> ESCI 3100 Mechanics of Solids (ESCI 2100, cc MATH 2530)	3
<input type="checkbox"/> ESCI 2100 Statics (cc PHYS 1610)	3	<input type="checkbox"/> ESCI 3101 Mechanics of Solids Lab (cc ESCI 3100)	1
<input type="checkbox"/> MATH 2530 Calculus III (MATH 1520)	4	<input type="checkbox"/> MATH 3550 Differential Equations (MATH 2530)	3
	16		16

JUNIOR YEAR

FALL		SPRING	
<input type="checkbox"/> CVNG 3010 Structural Analysis (ESCI 3100, CVNG 1500)	3	<input type="checkbox"/> CVNG 3090 Geotechnical Engineering (CVNG 3030)	3
<input type="checkbox"/> CVNG 3020 Structural Analysis Lab (cc CVNG 3010)	1	<input type="checkbox"/> CVNG 3100 Geotechnical Engrg. Lab (cc CVNG 3090)	1
<input type="checkbox"/> CVNG 3030 Civil Engineering Materials (ESCI 3100/3101)	3	<input type="checkbox"/> CVNG 3110 Transportation Engrg. (STAT 3850)	3
<input type="checkbox"/> CVNG 3040 Sustainability and Environmental Engineering (CHEM 1110 or CHEM 1070)	3	<input type="checkbox"/> CVNG 3120 Transportation Engrg. Lab (cc CVNG 3110)	1
<input type="checkbox"/> CVNG 3041 Sustainability and Environmental Engineering Lab (CHEM 1115, cc CVNG 3040)	1	<input type="checkbox"/> CVNG 3130 Hydraulic Engineering (ESCI 3200)	3
<input type="checkbox"/> ESCI 3200 Fluid Dynamics (ESCI 2100, MATH 2530)	3	<input type="checkbox"/> CVNG 3140 Hydraulic Engineering Lab (cc CVNG 3130)	1
<input type="checkbox"/> ESCI 3201 Fluid Dynamics Laboratory (cc ESCI 3200)	1	<input type="checkbox"/> CVNG 3150 Intro. to Structural Design (CVNG 3010, CVNG 3030)	3
<input type="checkbox"/> CVNG 3070 Engineering Project Management	2	<input type="checkbox"/> CVNG 3160 Intro. to Structural Design Lab (cc CVNG 3150)	1
	17		16

SENIOR YEAR

FALL		SPRING	
<input type="checkbox"/> CVNG 4500 Capstone Design I (9 or more credit hours of CVNG 31xx level coursework)	3	<input type="checkbox"/> CVNG 4510 Capstone Design II (CVNG 4500)	3
<input type="checkbox"/> PHIL 3400 Engineering Ethics	3	<input type="checkbox"/> Cultural Diversity Elective ⁵	3
<input type="checkbox"/> Civil Engineering Electives ⁶	3	<input type="checkbox"/> Humanistic Values Elective ⁵	3
<input type="checkbox"/> Civil Engineering Electives ⁶	3	<input type="checkbox"/> Civil Engineering Elective ⁶	3
<input type="checkbox"/> Professional Development Electives ⁶	3	<input type="checkbox"/> Professional Development Electives ⁶	3
	15		15

6. See page 2 for Civil Engineering and Professional Development Electives

Total 125

Faculty Mentor: _____.

Math/Science Electives:

These electives shall satisfy the ABET basic science requirements, which require at least one of these electives to be other than Math, Physics or Chemistry:

- **The 4-hour science elective** must be a lab course selected from the following list:

BIOL 1040 - Principles of Biology I
CHEM 1120/1125 - General Chemistry 2 and lab
PHYS 1630/1640 - Engineering Physics II and lab
EAS 1010/1020 - Earth's Dynamic Environment I and lab
EAS 1030/1040 - Earth's Dynamic Environment II and lab

- **The 3-hour Math/Science elective** must be sophomore level engineering student. Example courses include:

EAS 1050 - Introduction to Oceanography
EAS 2300 - Geology for Engineers
EAS 2530 - Fundamentals of Climate Systems
EAS 2110 - Meteorological Analysis
EAS 2440 - Atmospheric Processes and Systems
MATH 3110 - Linear Algebra for Engineers
MATH 3240 - Numerical Analysis
EAS 1090 - Climate Change
PHYS 1130 - Introduction to Astronomy

Courses for non-science majors and engineering courses will not be accepted.

Civil Engineering and Professional Development Electives:

Nine (9) civil engineering in-depth credit hours are required and must be selected from upper division (300 level and above) *civil engineering courses*. Six (6) additional professional development credit hours are also required and can be selected from the civil engineering department or courses from other departments that support the student's professional development goals. Courses can be selected from suggested elective tracks shown below or students can develop individualized plans with the approval of their faculty mentor (Not all courses will be offered each year – check Banner for availability of courses). A minimum of 6 hours must be upper division courses (300 level and above). Courses taken to satisfy a double majors and minors that enhance a student's professional development can be used to satisfy this requirement. Examples of acceptable minors and double majors include Math, Chemistry, Business Administration, Environmental Science, and Geology.

Infrastructure Analysis and Design

CVNG 4050 – Advanced Structural Analysis
CVNG 4070 – Structural Dynamics
CVNG 4090 – Advanced Reinforced Concrete
CVNG 4110 – Advanced Steel Design
CVNG 4130 – Bridge Engineering
CVNG 4150 – Pre-stressed Concrete
CVNG 4030 – Foundation Engineering

Environmental and Sustainable Engineering

CVNG 4190 – Sustainable Land Development Engineering
CVNG 4210 – Sustainable Water Management
CVNG 4230 – Biological Treatment Systems
CVNG 4250 – Physical/Chemical Treatment Systems
CVNG 4270 – Design of Wastewater Treatment Facilities
CVNG 4290 – Design of Drinking Water Treatment Facilities
CVNG 4310 – Air Pollution
CVNG 4330 – Solid and Hazardous Waste Management

Transportation Analysis, Planning, and Design

CVNG 4450 – Traffic Engineering
CVNG 4470 – Urban Transportation Planning
CVNG 4130 – Bridge Engineering
CVNG 4490 – Data Management and Analysis
CVNG 4310 – Air Pollution

Water Resources

CVNG 4330 – Open Channel Flow
CVNG 4350 – Hydraulic Modeling
CVNG 4370 – River Engineering
CVNG 4210 – Sustainable Water Management
EAS 4190 – Geospatial Methods in Environmental Studies
EAS 4260 – Environmental Geophysics
EAS 4350- Groundwater Hydrology

Engineering Business Administration

ECON 1900 - Principles of Economics*
ITM 2000/2010 - Introduction to Information Technology
IB 2001 - Introduction to International Business
ACCT 2200/2220 - Financial /Managerial Accounting
MKT 3000 - Introduction to Marketing Management
MGT 3000 - Management Theory & Practice
FIN 3010 - Principles of Finance
MGT 2000 - Legal Environment of Business I

Allied Engineering Courses

ECE 2001/2002 - Electrical Engineering w/lab
ESCI 2300 - Thermodynamics
ESCI 3110 - Linear Vibrations
MENG 3510 - Material Science
MENG 3430 - Measurements

*ECON-1900 Principles of Economics taken as humanistic values elective.

Humanistic Value Courses:

Courses shall be chosen from Philosophy, Theology, Social and Behavioral Sciences, or Humanities (guidelines below):

Social & Behavioral Sciences - A course in Anthropology, Communications, Communication Disorders, Economics, Education, Political Science, Psychology, Sociology, Social Work or Public Policy Studies.

Humanities courses include: Fine Arts (excludes applied, studio, and performance courses), Literature, History, and Foreign Languages (excludes English or native language).

Social & Behavioral Sciences courses (3-credit) include: Anthropology, Communication, Communication Disorders, Economics, Education, Political Science, Psychology, Social Work, Sociology, Criminal Justice, and Public Policy Studies (excludes field service courses).

2016 Cultural Diversity

All current Parks College students must complete a minimum of one approved cultural diversity course. This requirement may simultaneously satisfy a requirement for a second major, minor, or certificate program, or an elective course. This following is a list of approved cultural diversity courses. You may complete one course from either Diversity in the U.S OR Global Citizenship.

3 hrs Diversity in the U.S

AAM2000 Introduction to African American Studies
AAM2010 Contemporary Black America
AAM2220/ARTH2220 Introduction to African American Art
AAM2500 Intergroup Dialog
AAM2900 Intergroup Dialogue-Black Male Identity
AAM3370 Spirituals, Motown, and Hip Hop: African American Social History and Music
AAM4340/PSY4340 African American Psychology
AAM4810/PHIL4820 Philosophy and Race
AAM4900/WGST 4800 Black Women in Society
ARTH2220/AAM2220 African American Art
ASTD1000 Investigating America
ASTD 2600 American Places
ASTD 2700 Women and Social Justice
ASTD3000 American Decades
ASTD3100 Making the American City: Culture, Space, & 20th-century U.S. Urbanisms
ASTD3220 The Urban Crisis
ASTD3900 Mixed-Race America
ASTD3020 American Mosaic - Literature and Diversity
CCJ 2250 Introduction to Corrections
CMM230/AAM250 Intergroup Dialogue
CMM3300/WGST3300 Intercultural Communication
CMM4320 Communication across Racial Divisions
CMM4350 Stereotyping and Bias in Mass Media
CSDI3000 Characteristics of Multicultural Populations
ENGL3240 Reading the Female Bildungsroman
ENGL 3280 American Literatures after 1856
ENGL 3520 African American Literature Traditions II: After 1900
ENGL 3550 Native American Literature
ENGL3560 Ethnic American Literature
HCE4260 Race and Research Ethics
HIST3590 American Women
HIST3500 Progressive Era to Jazz Age, 1890-1920
HIST3640 History of the American West
MLNG3210 Repairing the World: Social Justice through the Lenses of the Jewish Tradition
MUSC1190 American Musical Mosaic
PHIL4320 Feminism and the History of Ethics
PHIL4810/WSTD4810 Philosophy of Feminism
PHIL4820/AAM4810 Philosophy and Race
POLS1200 U.S. State and Urban Politics
POLS2010 Ethics and Politics
POLS2150 Black Politics
POLS2220 Urban Politics
POLS3130 Civil Liberties and Civil Rights
POLS3770/WSTD3775 Feminist Theory: Gender Justice
POLS3780 Disability Theory and Politics
POLS3800 Structure of Poverty: Globally and Locally
POLS3330 Metropolitan Environment
POLS4710 Citizenship and Social Difference
PSY4330/WGST4330 Psychology of Oppression
PSY4340/AAM4340 African American Psychology
PUBH 3100 Public Health and Social Justice
SOC1110 Introduction to Sociology: Diversity Emphasis
SOC1120 Sociology: Diversity and Health
SOC1500 Urban Community: Race, Class and Spatial Justice
SOC2110 Sociology of Sport
SOC3220 Urban Sociology and The Wire
SOC3290 Native Peoples of North America
SOC3430/WSTD3430 Marriage and the Family
THR2700 Exploring U.S. Diversity in Theatre
SWRK3200 Diversity and Anti-Oppression Practice
WGST1900 Introduction to Women's and Gender Studies
WGST330/CMM330 Intercultural Communication
WGST3430/SOC3430 Marriage and Family
WGST3775/POLS3770 Feminist Theory-Gender Justice

WGST4200 Psychology of Women
WGST4330/PSY4340/AAM4340 Psychology of Oppression
WGST4810/PHIL4810 Philosophy of Feminism
WGST4800/AAM4900 Black Women in Society

3 hrs Global Citizenship

ARTH2100 Art of Jerusalem and Three Faiths
ARTH2120/AAM2120 Survey of Art in Africa since Pre-history
ARTH2140 Islamic Art and Society
ARTH2320/AAM2320 Art of the African Diaspora
ARTH2350 Excavating Culture of 3 Faiths
ARTH3140 Islamic Art and Society: Advanced Studies
ASCI3600 Humanitarian Action
ASTD2200 American Homefronts, Global Wars
ASTD2300 Americans Abroad
BIOL1340 Diversity of Life
BIOL3280 Ethnobotany
CMM4650 International Public Relations
EAS1090 Climate Change
ENGL3500 Literature of Post-Colonial World
ENGL3540 Literature of African Diaspora
ENGL3310 World Literary Traditions I
ENGL3320 World Literary Traditions II
ENGL3330 World Literary Traditions III
FREN4180 French and International Relations
FREN4870 Exoticism: France and its "Others"
HIST3230 Africa to 1884
HIST3240 Africa since 1884
ITAL3650 All Things Trans-: Modern Italy Across Borders, Cultures, and Disciplines
LLC3250 Migrants and Borders on Screen
MLNG2000 Cross-Cultural Preparation for Study Abroad (1hr)
MLNG2010 Cross-Cultural Inquiry for Study Abroad (1hr)
MLNG2020 Cross-Cultural Re-Entry from Study Abroad (1hr)
Note: Students must take MLNG 200,201, and 202 to fulfill Global Citizenship Requirement
MLNG3200 Israeli Culture: From the birth of Zionism to the 21st Century
MUSC1170 World Music
PHIL3420 Environmental and Ecological Ethics
PHIL3490 Jewish Life: Middle Ages to Modern Time
POLS1510 Introduction to Politics of the Developing World
POLS1600 Introduction to International Politics
POLS2520 Introduction to African Politics
POLS2530 Soviet and Post-Soviet Politics
POLS2540 Ethnicity and Internal War
POLS2550 Political Systems of Sub-Saharan Africa
POLS2560 The Politics of Asia
POLS2570 Introduction to Latin American Politics
POLS2590 Politics of the Middle East and North Africa
POLS2600 Introduction to International Political Economy
POLS3500 Asian Miracles
POLS3530 Comparative Revolutions
POLS3540 Latin American Social Movements
POLS3600 Problems of Globalization
POLS3650 International Relations of Africa
PSY4270 Cross-Cultural Psychology
PUBH2100 Introduction to Global Health
SOC1180 World Geography
SOC1200 Introduction to Anthropology
SOC2200 Cultural Anthropology
SOC3180 Immigration
SPAN4350 Latin American Testimony
SPAN4380 Cultural Stereotypes: Latin America
SPAN4400 Strangers in a Familiar Land: Displacements in Latin America
THEO2710 Religions of the World
THEO2720 Islam Religion & Culture
WGST4860 Global and Transnational Feminism