

NC STATE UNIVERSITY

College Of Engineering

Bachelor of Science in Engineering (BSE) At Craven Community College- Havelock

5/5/2009

PROGRAM OVERVIEW

WHAT IS THE BSE DEGREE PROGRAM?

The BSE degree program is a partnership between North Carolina State University (NCSU) and Craven Community College (CCC) designed to allow you to receive a Bachelor of Science degree in Engineering (BSE) from NCSU without having to leave the Havelock area. This degree is designed for the part-time, night student and the full-time, day student. In this program, you will take some classes from CCC and your engineering courses from NCSU via interactive video at the CCC-Havelock campus. Upon completion of the program, you will receive a Bachelor of Science in Engineering degree with a concentration in Mechanical & Aerospace Engineering from NCSU. The BSE degree is a general engineering degree and is currently not ABET accredited. The program will seek ABET accreditation as soon as the first class graduates.

HOW LONG WILL THE DEGREE TAKE TO COMPLETE?

The BSE is a full four-year engineering degree. Depending on the math background, most people going full time take between four and six years to complete an engineering degree. Going part-time (most night students take a maximum of two classes per semester), the degree will take approximately twenty-one semesters to complete. Like any engineering program, the BSE program is rigorous and will take a strong commitment to complete.

CAN I USE CLASSES I HAVE HAD IN OTHER DEGREES?

The short answer to this is yes, but you must make sure the course is one of the required courses in the BSE program and that NCSU accepts the course from where it was taken. If a required course was taken from one of North Carolina's community colleges within the last five years, it will be accepted. If it has been longer than five years since you have had a course from a North Carolina community college or you took it from another university, you will need to have your advisor check for you. The fact that it has been a long time since you had a course does not automatically mean it will not count.

WHAT IF I CURRENTLY HAVE A TECHNOLOGY DEGREE?

A technology degree is a great foundation for an engineering degree, but it will not help you complete your engineering degree any faster. Most of the classes you took for your technology degree will not count towards your engineering degree since the math and physics courses in the technology degrees are not calculus based. You might be able to use some of your transferable general education classes.

WHAT MATH SHOULD I TAKE?

A strong math foundation is essential. Your first math in the BSE program is Calculus I (MAT 271 at CCC). If you do not have the math background for calculus, it is imperative you take the time now to build it. To be prepared for calculus, you should have at least the equivalent of college algebra (MAT 171 at CCC) and college trigonometry (MAT 172 or MAT 175 at CCC).



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WHAT TUITION DO I PAY?

The tuition rate for CCC will be paid for all CCC courses and the NCSU tuition rate will be paid for all NCSU distance education courses.

WHAT IS REQUIRED TO GET INTO THE BSE PROGRAM?

In the BSE program, you will first attend CCC to obtain most of the freshman and sophomore level courses. You can do this simply by enrolling at CCC. After you complete these courses, you will apply for transfer to NC State University into the BSE program. General requirements for transfer are as follows:

1. 30 credit hours or more of transferable college-level courses
2. 3.0 or higher cumulative GPA on all transferable college-level courses (will reviewed GPA between 2.5 – 2.9 on a case-by-case basis).
3. Two college-level English composition courses (ENG 111 **and** ENG 112 or ENG 113 or ENG 114)
4. College-level chemistry course with lab (CHM 151)
5. 2.0 or better NCSU GPA.
6. Calculus I and Calculus II (MAT 271 & MAT 272) with at least a 2.5 GPA in the last two calculus or higher college mathematics classes taken.
7. Calculus-based physics-I (PHY 251)
8. Satisfy all UNC minimum course requirements from high school or college.

In addition to these and your major classes, you will need to complete the following requirements before graduation:

1. Meet Humanities & Social Science Requirements → see attached handout
2. Meet Foreign Language Proficiency Requirement
2 years high school of the same language with a C (78.0%) average or better each year;
Or 2 semesters of college foreign language (SPA 111/112 at LCC/CCC).
3. Meet Physical Education Requirement
Fitness and Wellness Elective (1 hr) -> NCSU PE 101-PE 109. At CCC: PED 110, 115
Physical Education Elective (1 hr) -> NCSU PE *** Any CCC activity based PED class

HOW DO I GET STARTED?

The first two years of the 2+2 BSE degree are shown on the next page along with a suggested full-time and part-time course sequence. To start taking your CCC classes, contact the CCC-Havelock campus (252-444-6005) for details on applying to the college and registering for classes.

WHERE CAN I GET HELP?

If you have questions or just want to talk to someone about the program, contact Bill Fortney at 252-444-3357 (wbfortne@ncsu.edu).

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Full Course List For BSE Havelock Degree

Freshman Year

1/1/2008

Fall Semester

Course #	Course Name	CCC Class	Hrs
CH 101	Chemistry, A Molecular Science	CHM 151	3
CH 102	General Chemistry Lab	CHM 151	1
E 101	Introduction to Engr. & Prob. Solv.	EGR 150	1
E 115	Intro to Computing Environ	NCSU	1
MA 141	Calculus I	MAT 271	4
ENG 101	Academic Writing and Research (1/2)	ENG 111	3
PE ***	Physical Education	PED ***	1
*** ***	Human/Social Science Elective	see sheet	3

Semester Total 17

Spring Semester

Course #	Course Name	CCC Class	Hrs
E 101	Academic Writing and Research (1/2)	ENG 112, 113	3
CSC 112 or	FORTRAN or C++	CSC 134 or 136	3
MA 241	Calculus II	MAT 272	4
PY 205	Physics for Engr & Sc I	PHY 251	4
*** ***	Human/Social Science Elective	see sheet	3
PE PE	Fitness and Wellness Elective	PED 110, 115 or 120	1

Semester Total 18

Sophomore Year

Fall Semester

Course #	Course Name	CCC Class	Hrs
GC 211	Engineering Graphics	DFT 170	3
MA 242	Calculus III	MAT 273	4
MAE 206	Engineering Statics	NCSU	3
PY 208	Physics for Engr & Sc II	PHY 252	4
*** ***	Human/Social Science Elective	see sheet	3

Semester Total 17

Spring Semester

Course #	Course Name	CCC Class	Hrs
MA 341	Appl Differential Eq	MAT 285	3
MAE 208	Engr Dynamics	NCSU	3
MAE 314	Solid Mechanics	NCSU	3
MSE 201	Structure and Prop of Engr Materials	NCSU	3
*** ***	Human/Social Science Elective	see sheet	3

Semester Total 15

Junior Year

Fall Semester

Course #	Course Name	CCC Class	Hrs
MAE 308	Fluid Mechanics	NCSU	3
MAE 301	Engr Thermodynamics I	NCSU	3
MAE 310	Heat Transfer Fundamentals	NCSU	3
MAE 315	Dynamics of Machines	NCSU	3
MAE 305	ME Lab I	NCSU	1
ENG 331	Comm for Engr & Tech	NCSU	3

Semester Total 16

Spring Semester

Course #	Course Name	CCC Class	Hrs
MAE 316	Strength of Mech Comp	NCSU	3
MAE 435	Prin of Auto Control	NCSU	3
ECE 331	Principles of Elec Engr I	NCSU	3
MAE 306	ME Lab II	NCSU	1
ST 370	Prob & Stat for Engineers	NCSU	3
*** ***	Human/Social Science Elective	see sheet	3

Semester Total 16

Senior Year

Fall Semester

Course #	Course Name	CCC Class	Hrs
*** ***	Approved Technical Elective	NCSU	3
MAE 415	Mech Engr Analysis	NCSU	3
MAE 469	Controls Lab	NCSU	1
*** ***	Human/Social Science Elective	see sheet	3
*** ***	Approved Technical Elective	NCSU	3

Semester Total 13

Spring Semester

Course #	Course Name	CCC Class	Hrs
*** ***	Approved Technical Elective	NCSU	3
MAE 416	ME Design	NCSU	4
MAE 412	Energy Systems	NCSU	3
*** ***	Ethics Elective (Hum/Soc Sci Elect)	PHI 240	3

Semester Total 13

Choice of Tech Elective must be approved by the BSE Site Director

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BSE-HAVELOCK PART-TIME NIGHT COURSE SEQUENCE FOR MATH/SCIENCE/ENGINEERING COURSES

NOTE: Other general education courses will need to be worked in based on student's schedule

2/5/2009

Year	Term	NCSU Class	CCC Class	Description	Credit Hours	Prerequisites	Corequisites
1	F	E101	EGR 150	Intro To Engr	1		
		MA 141	MAT 271	Calculus I	3		
	Sp	MA 241	MAT 272	Calculus II	4	Calc-I	
		PY 205	PHY 251	Physics I	4	Calc-I	Calc-II
	Su	CSC 112	CSC 136	FORTRAN or C++	3		
2	F	MA 242	MAT 273	Calculus III	4	Calc-II	
		PY 208	PHY 252	Physics II	4	Calc-II, Phy 251	
	Sp	NA	MAT 280	Linear Algebra	3	Calc-I	
		MA 341	MAT 285	Differential Equations	3	Calc-II	
		CH 101 & 102	CHM 151	General Chemistry I	4		
	SU	GC 211/120	DFT 170	Foundations of Graphics	3	E115	
3	F	MSE 201		Materials	3	Chem-I	
		MAE 206		Statics	3	Phy-I	Calc-III
	Sp	MAE 208		Dynamics	3	Calc-III, Statics-C	
		MAE 314		Solids	3	Calc-III, Statics-C	Materials
	Su	ENG 331	x	Comm For Engr & Tech	3		
4	F	MAE 301	x	Engineering Thermodynamics I	3	Calc-III, Phy-II	
		MAE 315	x	Dynamics of Machines	3	Dynamics-C, Programming	Dif. Eq
	Sp	ST 370	Distance	Prob & Stat. for Engrs	3	Calc-I	
		MAE 316	x	Strength Of Mechanical Components	3	Programming, MAE 314-C	Dif Eq.
	SU	MAE 305	x	ME Lab I	1		
	5	F	MAE 308	x	Fluid Mechanics	3	Calc-III, Programming, Dynamics-C
MAE 310			x	Heat Transfer Fundamentals	3	Programming, Dif Eq, MAE 301-C	MAE 308
Sp		MAE 435	x	Principles of Automatic Control	3	Dif Eq, MAE 315	
		ECE 331	x	Princ Of Elec Engr I	3	Calc-II, Physics II	
SU		MAE 306	x	ME Lab II	1	MAE 305	MAE 310
6		F	MAE 415	x	Analysis for Mechanical Engr Design	3	MAE 302, MAE 308, MAE 315, MAE 316
	Tech Elective				3		
	Sp	MAE 412	x	Design of Thermal System	3	MAE 302, MAE 308, MAE 310	
		Tech Elective			3		
	SU	MAE 469	x	Controls Laboratory	1		MAE 461 or MAE 435
	7	F	MAE 416	x	Mechanical Engineering Design	4	MAE 415
Tech Elective					3		

General Education Program (GEP) Requirements
Humanities, Social Sciences, Visual & Performing Arts, and Interdisciplinary Perspectives
for NC Community College Pre-Engineering Students

A total of **seven courses (21 credit hours)** from the appropriate GEP category list are required. These courses may be taken in any order. All of the courses must be completed for a letter grade; none of the seven courses may be taken as pass / fail or credit only grading.

One of the courses selected must satisfy the U.S. Diversity co-requisite (courses satisfying this are noted with USD) and **one of the courses selected must satisfy the Global Knowledge co-requisite** (courses satisfying this are noted with GK).

The new General Education Program (GEP) for undergraduates at N.C. State was approved by the Provost on February 1, 2008 to be effective beginning Summer II, 2009. The GEP will apply to students entering NC State Summer II, 2009 and later.

Students should consider the GEP web site the authoritative source for approved courses and requirements. This document is provided merely as a planning tool. <http://www.ncsu.edu/uap/academic-standards/gep/index.html>

NOTE: All courses on this sheet are North Carolina Community College Course Numbers

Humanities (2 courses) – Select two courses (from different disciplines) from the list below. ME/AE/MSE majors select PHI 240 (GK) to fulfill Ethics requirement _____

List of Courses For Humanities

ENG 231, 232, 233, 241, 242, 243, 251(GK), 252(GK), 273(USD) HIS 111(GK),112,121(GK), 122, 131, 132, 165(GK), 211(GK), 212(GK), 213(GK),214(GK), 236, 251,252 REL 110, 211(GK), 212(GK),221 COM 252 PHI 215(GK), 220(GK), 221(GK), 240(GK) _____

(3cr.)

(3cr.)

Social Sciences (2 courses) – Take ECO 251 and select one courses from the list below. ENE (Environmental) – take other course at NC State _____

List of Courses For Social Sciences

ANT 220(GK), 230,240(GK) COM 120 ECO 251,252 ~~GEO 110,121(GK)~~ POL 120, 130, 210(GK),220(GK) PSY 150, 237, 241 SOC 210, 213(USD), 220(USD), 230(USD), 240, 242, 252 _____

ECO251
(3cr.)

(3cr.)

Interdisciplinary Perspectives (2 courses) – Select two courses from the list below. BME – take one course at NC State IE – one course needs to be HUM 110 _____

List of Courses For Interdisciplinary Perspectives

HUM 110 ENG 275 PHI 250(GK) _____

(3cr.)

(3cr.)

Additional Breadth (1 course) – Select one courses from the list for Humanities, the list for Social Sciences or the list for Visual & Performing arts below. _____

List of Courses For Visual & Performing Arts

ART 114,115,116 COM 231,233 MUS 110,112(USD) _____

(3cr.)

Course Used To Meet GK Requirement _____ Course Used To Meet USD Requirement _____