NC Community College Four-Year Pathway Plan

Schedule for Full-Time Students
Pursuing AS Degree & transfer into Biological Engineering (BS) at NCSU.
(Placed Out Of All Developmental Courses)

North Carolina Community College classes are listed below in bold with the NC State degree requirements fulfilled listed next to the classes.

North Carolina State University **strongly recommends** students complete their Associate's degree prior to transferring to NCSU. Pathways are structured for students who have completed all requirements for their Associate's degree and qualify for the CAA.

This degree pathway requires 4 summer courses at NC State after completion of the AS degree. Please see the NC State schedule of courses for more details.

| NC (| COMMUNITY C | OLLEGE FIRST YEAR | |
|---|-------------|--|--------|
| Fall Semester | Credit | Spring Semester | Credit |
| ENG 111 - ENG 101: Academic Writing and Research | 3 | ENG 112 - GEP Requirement | 3 |
| MAT 271 – MA 141, Calculus I | 4 | MAT 272 – MA 241, Calculus II | 4 |
| CHM 151 – CH 101: General Chemistry I, CH 102: General | 4 | PHY 251 – PY 205 & PY 206 | 4 |
| Chemistry I Lab ECO 251 – EC 201, Departmental Economics Requirement | 3 | EGR 150 – Departmental Substitution for E 101 | 2 |
| ACA 122 - Free Elective | 1 | CHM 152 – CH 201: Quantitative Chemistry, CH 202: Quantitative Chemistry Lab | 4 |
| TOTAL CREDIT HOURS | 15 | TOTAL CREDIT HOURS | 17 |
| Students must take ACA 122 in the first or second seme | ster. | | |
| NC CC | OMMUNITY CO | LLEGE SECOND YEAR | |
| Fall Semester | Credit | Spring Semester | Credit |
| PHY 252 – PY 208 & PY 209 | 4 | EGR 220 – Engineering Elective | 3 |
| ENG 231 – ENG 265, GEP Humanities | 3 | COM 231 - COM 110, GEP Requirement | 3 |
| MAT 273 – MA 242, Calculus III | 4 | BIO 111 – BIO 183, Intro to Cellular and Molecular Biology | 4 |
| HUM 110 – GEP Requirement | 3 | MAT 285 – MA 341, Differential Equations | 3 |
| TOTAL CREDIT HOURS | 14 | PSY 150 – PSY 200, GEP Social Science | 3 |
| | | TOTAL CREDIT HOURS | 16 |

THIS SHEET IS FOR ADVISING PURPOSES ONLY. Students should work with their Advisor to determine course selections that will result in the greatest transferrable credit, for the intended program, upon transfer to the four-year school.

Note 4-semester outline based upon no pre-requisites classes required.

- Students should seek academic advising to determine the best courses and sequence to meet their educational goals and degree requirements.
- Following the Pathway to Degree does not guarantee admission to NC State University or guarantee an AS degree or BS degree will be conferred.
- Please refer to NC State Undergraduate Admissions for more information on admission to NC State and the transfer of credits to NC State: http://admissions.ncsu.edu/transfer-students/

NC STATE UNIVERSITY

Schedule of Courses for the Biological Engineering (BS) (11BEBS)

Before applying please consult the Transfer Admission Review Standards for admission into the College of Engineering.

***Students will need to complete both E 115, CSC 116, MAE 201, and MAE 208 (10 hours total credit) at NC State summer school before matriculating in the Fall. ***

| BAE 302: Transport Phenomena BAE 305: BE Circuits MAE 308: Fluid Mechanics or CE 382: Hydraulics BAE Elective Biological Science or Chemistry Elective TOTAL CREDIT HOURS BAE 401: Instrumentation for Biological Systems Advanced Biology Elective TOTAL CREDIT HOURS ACCURATE SENIOR YEAR Fall Semester Credit BAE 100: Introduction to Biological Engineering BAE 202: Shop Processes and Management BAE 202: Shop Processes and Management BAE Elective BAE 401: Instrumentation for Biological Systems Advanced Biology Elective TOTAL CREDIT HOURS 14 NC STATE SENIOR YEAR Credit Spring Semester Credit | NC STATE JUNIOR YEAR | | | | | | |
|--|---|----------|--|--------|--|--|--|
| BAE 305: BE Circuits MAE 308: Fluid Mechanics or CE 382: Hydraulics BAE Elective Biological Science or Chemistry Elective TOTAL CREDIT HOURS BAE 202: Shop Processes and Management BAE Elective BAE Elective BAE 401: Instrumentation for Biological Systems Advanced Biology Elective TOTAL CREDIT HOURS BAE 314: Solid Mechanics or CE 313: Mechanics of Solids ST 370: Probability and Statistics for Engineers BAE 451: Engineering Design I Engineering Elective 3 Advanced Biology Elective TOTAL CREDIT HOURS Credit Spring Semester Credit BAE 452: Engineering Design II BAE 452: Engineering Design II BAE 452: Engineering Elective 3 Advanced Biological Engineering Elective 3 Advanced Biological Engineering Elective 4 Advanced Biological Engineering Elective 5 BAE 451: Engineering Elective 4 Advanced Biological Engineering Elective 5 BAE 452: Engineering Elective 4 BAE 452: Engineering Elective 5 BAE 453: Com. Engr. & Tech. or ENG 333: Com. Sci. & Res. TOTAL CREDIT HOURS Minimum Credit Hours Required for Graduation: 125 | Fall Semester | Credit | Spring Semester | Credit | | | |
| MAE 308: Fluid Mechanics or CE 382: Hydraulics BAE Elective Biological Science or Chemistry Elective TOTAL CREDIT HOURS Solid Mechanics or CE 382: Hydraulics BAE Elective BAE Elective BAE 401: Instrumentation for Biological Systems Advanced Biology Elective TOTAL CREDIT HOURS NC STATE SENIOR YEAR Fall Semester Credit Spring Semester Credit MAE 314: Solid Mechanics or CE 313: Mechanics of Solids ST 370: Probability and Statistics for Engineers BAE 451: Engineering Design I Engineering Elective 3 Advanced Biological Engineering Elective 3 Advanced Biological Engineering Elective 3 Advanced Biological Engineering Elective 3 TOTAL CREDIT HOURS 14 Minimum Credit Hours Required for Graduation: 125 | BAE 302: Transport Phenomena | 3 | BAE 100: Introduction to Biological Engineering | 1 | | | |
| BAE Elective Biological Science or Chemistry Elective TOTAL CREDIT HOURS NC STATE SENIOR YEAR Fall Semester MAE 314: Solid Mechanics or CE 313: Mechanics of Solids ST 370: Probability and Statistics for Engineers BAE 451: Engineering Design I Engineering Elective TOTAL CREDIT HOURS BAE Elective BAE 452: Engineering Elective 3 Advanced Biology Elective TOTAL CREDIT HOURS Credit Spring Semester Credit BAE 452: Engineering Design II BAE Elective Advanced Biological Engineering Elective String Semester Credit BAE Elective Spring Semester Spring Semester Spring Semester Credit BAE Elective Spring Semester Spring Semester Spring Semester Credit BAE Elective Spring Semester Spring Seme | BAE 305: BE Circuits | 3 | BAE 202: Shop Processes and Management | 4 | | | |
| Biological Science or Chemistry Elective TOTAL CREDIT HOURS BAE 452: Engineering Design II BAE 452: Engineering Design II BAE Elective Advanced Biological Engineering Elective BEngineering Elective TOTAL CREDIT HOURS | MAE 308: Fluid Mechanics or CE 382: Hydraulics | 3 | BAE Elective | 3 | | | |
| Biological Science or Chemistry Elective TOTAL CREDIT HOURS NC STATE SENIOR YEAR Fall Semester Credit MAE 314: Solid Mechanics or CE 313: Mechanics of Solids ST 370: Probability and Statistics for Engineers BAE 451: Engineering Design I Engineering Elective Engineering Elective TOTAL CREDIT HOURS Minimum Credit Hours Required for Graduation: Advanced Biology Elective TOTAL CREDIT HOURS Advanced Biology Elective BAE 452: Engineering Design II BAE Elective Advanced Biological Engineering Elective Ethics Elective ENG 331: Com. Engr. & Tech. or ENG 333: Com. Sci. & Res. TOTAL CREDIT HOURS Minimum Credit Hours Required for Graduation: | BAE Elective | 3 | BAE 401: Instrumentation for Biological Systems | 3 | | | |
| TOTAL CREDIT HOURS 15 | Biological Science or Chemistry Elective | 3 | | | | | |
| NC STATE SENIOR YEAR Fall Semester Credit BAE 452: Engineering Design II BAE Elective Advanced Biological Engineering Elective Engineering Elective 3 BAG 331: Com. Engr. & Tech. or ENG 333: Com. Sci. & Res. TOTAL CREDIT HOURS NC STATE SENIOR YEAR Credit Spring Semester Credit BAE 452: Engineering Design II BAE Elective Advanced Biological Engineering Elective Ethics Elective ENG 331: Com. Engr. & Tech. or ENG 333: Com. Sci. & Res. TOTAL CREDIT HOURS 14 Minimum Credit Hours Required for Graduation: | TOTAL CREDIT HOURS | 15 | Advanced Biology Elective | 3 | | | |
| Fall Semester Credit Spring Semester Credit MAE 314: Solid Mechanics or CE 313: Mechanics of Solids ST 370: Probability and Statistics for Engineers BAE 451: Engineering Design I Engineering Elective 3 3 4 4 4 4 4 5 6 6 7 7 7 7 7 8 7 8 7 8 8 7 8 8 8 8 8 8 | | | TOTAL CREDIT HOURS | 14 | | | |
| MAE 314: Solid Mechanics or CE 313: Mechanics of Solids ST 370: Probability and Statistics for Engineers BAE 451: Engineering Design I Engineering Elective 3 Engineering Elective 3 Engineering Elective 3 TOTAL CREDIT HOURS BAE 452: Engineering Design II BAE Elective Advanced Biological Engineering Elective Ethics Elective ENG 331: Com. Engr. & Tech. or ENG 333: Com. Sci. & Res. TOTAL CREDIT HOURS Minimum Credit Hours Required for Graduation: | | NC STATE | SENIOR YEAR | | | | |
| ST 370: Probability and Statistics for Engineers BAE 451: Engineering Design I Engineering Elective 3 Advanced Biological Engineering Elective Engineering Elective 3 Engineering Elective 3 Engineering Elective 3 TOTAL CREDIT HOURS ENG 331: Com. Engr. & Tech. or ENG 333: Com. Sci. & Res. TOTAL CREDIT HOURS Minimum Credit Hours Required for Graduation: | Fall Semester | Credit | Spring Semester | Credit | | | |
| BAE 451: Engineering Design I Engineering Elective Engineering Elective TOTAL CREDIT HOURS 2 Advanced Biological Engineering Elective Ethics Elective ENG 331: Com. Engr. & Tech. or ENG 333: Com. Sci. & Res. TOTAL CREDIT HOURS 14 Minimum Credit Hours Required for Graduation: | MAE 314: Solid Mechanics or CE 313: Mechanics of Solids | 3 | BAE 452: Engineering Design II | 2 | | | |
| Engineering Elective Engineering Elective Engineering Elective TOTAL CREDIT HOURS Advanced Biological Engineering Elective Ethics Elective ENG 331: Com. Engr. & Tech. or ENG 333: Com. Sci. & Res. TOTAL CREDIT HOURS 14 Minimum Credit Hours Required for Graduation: | ST 370: Probability and Statistics for Engineers | 3 | BAE Elective | 3 | | | |
| Engineering Elective TOTAL CREDIT HOURS TOTAL CREDIT HOURS Solution: TOTAL CREDIT HOURS TOTAL CREDIT HOURS TOTAL CREDIT HOURS 14 Minimum Credit Hours Required for Graduation: | BAE 451: Engineering Design I | 2 | Advanced Biological Engineering Elective | 3 | | | |
| TOTAL CREDIT HOURS 14 TOTAL CREDIT HOURS 14 Minimum Credit Hours Required for Graduation: | Engineering Elective | 3 | Ethics Elective | 3 | | | |
| Minimum Credit Hours Required for Graduation: | Engineering Elective | 3 | ENG 331: Com. Engr. & Tech. or ENG 333: Com. Sci. & Res. | 3 | | | |
| · | TOTAL CREDIT HOURS | 14 | TOTAL CREDIT HOURS | 14 | | | |
| • | Minimum Cradit Hours Pequired for Graduation: | | | | | | |
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