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| \**REQUIRES A GRADE OF “C” OR BETTER* |
| Date | Grade | Course | Cr | Title | Sem | Pre-Req | Co-Req |
| Semester 1 | (17 Credits) |  |  |  |  |  |
|  |  | GE-S  | 3 | Social Sciences (w/ 6K words, D or N as needed) | F S Su |  |  |
|  |  | State Core- H | 3 | Humanities (w/ D or N as needed)  | F S Su |  |  |
|  |  | MAC 2311\* | 4 | Analytical Geometry & Calc 1 (GE-M) | F S Su | Passing Score Readiness Assessment  |  |
|  |  | CHM 2095\* | 3 | General Chemistry 1 (or CHM2045) (GE- B/P) | F S Su | Passing Score Readiness Assessment  |  |
|  |  | CHM 2045L | 1 | General Chemistry Lab 1 (GE-B/P) | F S Su |  |  |
|  |  | IDS 1161 IDS 2935  | 3 | What is The Good Life or Quest 1 (w/ 4K words) | F S Su |  |  |
| Semester 2 | (14 Credits) |  |  |  |  |  |
|  |  | CHM 2096\* | 3 | General Chemistry 2 (Or CHM2046) (GE-B/P) | F S Su | CHM 2095 & CHM 2045L |  |
|  |  | CHM 2046L | 1 | General Chemistry Lab 2 (GE-B/P) | F S Su |  |  |
|  |  | ABE2062 | 3 | Biology for Engineers (GE-B/P) | F |  |  |
|  |  |  Or BSC2010 |  |  **or** Integrated Principles of Biology 1 | F S Su |  |  |
|  |  | MAC 2312\* | 4 | Analytical Geometry & Calc 2 (GE-M) | F S Su | MAC 2311 |  |
|  |  | IDS 2935 | 3 | Quest 2 | F S Su |  |  |
| Semester 3 | (17 Credits) |  |  |  |  |  |
|  |  | PHY 2048\* | 3 | Physics with Calculus 1 (GE-B/P) | F S Su | MAC 2311 | MAC 2312 |
|  |  | PHY 2048L | 1 | Physics Lab 1 (GE-B/P) | F S Su |  | PHY 2048 |
|  |  | MAC 2313\* | 4 | Analytical Geometry & Calc 3 (GE-M) | F S Su | MAC 2312 |  |
|  |  | ABE 2012C\*  | 3 | Intro to Biological Engineering (2K words) | F  |  | MAC 2311 |
|  |  | State Core-S | 3 | Social Sciences (with D if needed) |  |  |  |
|  |  | GE-C  | 3 | ENC1101 or ENC1102 (6K words) | F S Su |  |  |
| Semester 4 | (15 Credits) |  |  |  |  |  |
|  |  | PHY 2049\* | 3 | Physics with Calculus 2 (GE-B/P) | F S Su | PHY 2048, MAC 2312 | MAC 2313 |
|  |  | PHY 2049L | 1 | Physics with Calculus Lab 2 (GE-B/P) | F S Su |  |  |
|  |  | MAP 2302 | 3 | Elementary Differential Equations | F S Su | MAC 2312 |  |
|  |  | EGM 2511\* | 3 | Engineering Mechanics-Statics | F S Su | PHY 2048 | MAC 2313 |
|  |  | EML 3007 | 3 | Elements of Thermodyn. and Heat Transfer | F S Su | CHM 2095, MAC 2313 & PHY 2048 |  |
|  |  | EGN 2020C | 2 | Engineering Design & Society | F S Su |  |  |
| Semester 5 | (12 Credits) |  | **THIS IS A SUMMER SEMESTER** |  |   |  |
|  |  | EGM3520\* | 3 | Mechanics of Materials | F S Su | EGM 2511, MAC 2313 |  |
|  |  | EML 2023 orCGN 2328 | 3 | Computer Aided Graphics and Design or Technical Drawing and Visualization | F S Su | 2 EG or > |  |
|  |  | CGN 3710 orEEL 3003 | 3 | Experimentation and Instrumentation in Civil Engineering or Elements of Elec. Eng. | F S Su | PHY 2049 |  |
|  |  | CHM 2200 (F,Su) (or 2210) or BCH3023 | 3 | Organic Chemistry (or Organic Chem 1) or Elem Organic and Biological Chemistry | F S Su | CHM 2096 & CHM 2046L or equiv. |  |
| Semester 6 | (12-13 Credits) |  |  |  |  |  |
|  |  | ABE 3612C\* | 4 | Heat & Mass Transfer in Biological Systems | F |  | CGN 3421, ENV3040c, or COP2271 & lab |
|  |  | ENV 3040C  or CGN 3421  or COP 2271 & lab | 3-4 | Computer Methods in Environmental Eng or Computer Methods in Civil Eng (4). or Computer Programming for Engineers | F S | 3 EG or >MAC 2313, MAP 2302MAC 2312 |  |
|  |  | EGM 3400\* | 2 | Elements of Dynamics | F S | EGM 2511, MAC 2313 |  |
|  |  | ENC 3246 (6K words) | 3 | Professional Communication for Engineers | F S | ENC 1101 |  |
| Semester 7 | (13-15 Credits) |  |  |  |  |  |
|  |  | ABE 3000C\* | 3 | Applications in Biological Engineering | S | BSC 2010 or equiv. |  |
|  |  | ABE 3652C\* Or CGN3501C | 3-4 | Physical & Rheolog. Prop. of Bio MaterialsCivil Engineering Materials (4) | S | CHM 2045, MAC 2313 & PHY 2048 |  |
|  |  | EGS4034 or EML2920 or ECH4934 | 1 | Engineering Professionalism and Ethics course | F S |  |  |
|  |  | EGN3353C or CWR3201 | 3-4 | Fluid Mechanics(3) or Hydrodynamics(4) | F S Su | MAC 2313 & EGM 2511EGN3400, MAP3202 |  |
|  |  | ABE4413C\* | 3 | Post Harvest Operations Engineering | Odd S | ABE3612c |  |
| Semester 8 | (15 Credits) |  |  |  |  |  |
|  |  | ABE 4171\* | 3 | Power and Machines for Biological Systems | F | EGM3520 & EML3007 |  |
|  |  | ABE 4042C\* | 2 | Biological Engineering Design 1 | F | 4 EG |  |
|  |  | CEG 4011 | 4 | Soil Mechanics | F S | EGM 3520 |  |
|  |  |  | 3 | Engineering Elective |  |  |  |
|  |  |  | 3 | Technical Electives |  |  |  |
| Semester 9 | (13 Credits) |  |  |  |  |  |
|  |  | ABE 4043C\* | 2 | Biological Engineering Design 2 | S | ABE 4042C, 4 or 5 EG |  |
|  |  | ABE 4033\* | 3 | Fundamentals & App. Of Biosensors | S | CHM2201, BSC2010, MAP2302 |  |
|  |  | ABE3212C\* | 4 | Land & Water Resources Engineering | S | ENV 3040C | CWR 3201 orEGN 3353 |
|  |  |  | 4 | Departmental Elective |  |  |  |

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| TECHNICAL SCIENCE ELECTIVES |
| Date | GR | Course # | Course | CR |
|  |  | ALS 3133 | Agricultural & Environmental Quality (3) | 3 |
|  |  | AEB 3103 | Principles of FRE | 3 |
|  |  | AEB 3111 | Linear Program Agriculture | 3 |
|  |  | AGR4214c | Applied Field Crop Prod | 3 |
|  |  | AGR4231c | Forage Science & Range | 3 |
|  |  | ANS3006c | Intro To Animal Science | 3 |
|  |  | AOM4434 | Precision Agriculture | 3 |
|  |  | AOM4932 | Introduction to Biofuels | 3 |
|  |  | AOM/PKG 3000 or above | **As approved by advisor** |  |
|  |  | PLS 3004C | Principles of Plant Science | 3 |
|  |  |  | ***Note: Pre-med and Pre-vet science courses may count toward technical electives. Check with your advisor.*** |  |
| DEPARTMENTAL ELECTIVES |
| Date | GR | Course # | Course | CR |
|  |  | ABE 4231c | Irrigation and Drainage Engineering  | 4 |
|  |  | ABE 4034  | Remote Sensing in Engineering: Science, Sensor & Applications  | 3 |
|  |  | ABE 4812 | Food and Bioprocess Engineering Unit Operations  | 4 |
|  |  | One AOM/PKG 3000 or above | **As approved by advisor** |  |
|  |  | ABE5xxx or | Any ABE Graduate Level Course |  |
|  |  | ABE6xxx |  |  |
|  |  |  |  |  |
| **ENGINEERING ELECTIVES** |
|  |  | CGN4101 | Civil Engr Cost Analysis | 3 |
|  |  | CEG 4012 | Geotechnical Engineer | 3 |
|  |  | CEG 4104 | Retain Wall Embank | 3 |
|  |  | CEG 4111 | Foundations Engr Design | 3 |
|  |  | CES 3102 | Mechanics of Eng Structure | 3 |
|  |  | CES 4141 | Stress Analysis | 3 |
|  |  | CES 4605 | Analysis/Design Steel | 3 |
|  |  | EML 4450 | Energy Conversion | 3 |
|  |  | EML 4600 | Refrigeration & Air Fundamentals | 3 |
|  |  | EML 4601 | Heat Air Sys Design | 3 |
|  |  | EGN4641 | Engineering Entrepreneurship | 3 |
|  |  | EGN4643 | Engineering Innovation | 3 |
|  |  | EGN4038 | Engineering Leadership | 3 |
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|  |  |  |  |  |
| The above electives have been identified as appropriate for your specialization area but you are not limited to this list. Other technical, departmental, or engineering courses at the 3000 level or approve may count if approved in advance by your advisor.  **Other** **ABE courses count toward any elective area.** |