THE UNIVERSITY OF ALABAMA IN HUNTSVILLE

Atmospheric \& Earth Science, BS Earth System Science Concentration

| Completed | Course Number | Credits | Course Name | Prerequisites, Corequisites and/or Prerequisites with Concurrency | Semester Usually Offered |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Charger Foundations |  |  |  |  |  |
| Area I: Freshman Composition 6 credits - see attached for more options |  |  |  |  |  |
| $\square$ | EH 101 | 3 | College Writing I | Placement | FA/SP/SU |
| $\square$ | EH 102 | 3 | College Writing II | EH 101 or EH 101S | FA/SP/SU |
| $\square$ | EH 103 | 3 | Accelerated College Writing | Placement | SP |
| $\square$ | EH 105 | 3 | Honors English Seminar | Honors | FA |
| Area II: Humanities and Fine Arts 12 credits |  |  |  |  |  |
| $\square$ |  | 3 | Fine Art | See attached for choices |  |
| $\square$ |  | 3 | Literature | Completion of Area I |  |
| $\square$ |  | 3 | Non-Literature Humanity | See attached for choices |  |
| $\square$ | * | 3 | Humanities/Fine Arts/Literature | See attached for choices |  |
| Area III: Mathematics and Sciences 11-12 credits |  |  |  |  |  |
| Mathematics 3-4 credits |  |  |  |  |  |
| $\square$ | $\begin{gathered} \text { MA 120 } \\ \text { (or MA 171/171S) } \end{gathered}$ | 3-4 | Math Professional Applications (or Calculus A) | Placement or MA 107, 112 (or MA 113 or 115) | FA/SP/SU |
| Natural Sciences (Lab) 8 credits |  |  |  |  |  |
| $\square$ | $\begin{aligned} & \text { PH 101/101L } \\ & \text { (or PH 111/115) } \end{aligned}$ | 4 | General Physics I + Lab <br> (or General Physics w/ Calculus I + | (or MA 171) | FA/SP/SU |
| $\square$ | $\begin{gathered} \text { PH 102/102L } \\ \text { (or PH 112/116) } \end{gathered}$ | 4 | General Physics II + Lab (or General Physics w/ Calculus II + | $\begin{gathered} \text { PH } 101 \\ \text { (or MA 172, PH 111/114) } \end{gathered}$ | FA/SP/SU |
| Area IV: History and Social \& Behavioral Sciences 12 credits |  |  |  |  |  |
| $\square$ |  | 3 | History | See attached for choices |  |
| $\square$ | AES 105 | 3 | World Geography | Strongly Recommended, see attached for all choices | FA/SP |
| $\square$ | AES 110 | 3 | Human Geography | Strongly Recommended, see attached for all choices | FA/SP |
| $\square$ |  | 3 | History/Social \& Behavioral Science | See attached for choices |  |
| Area V: Pre-Professional |  |  |  |  |  |
| For Atmospheric \& Earth Science Majors (ESS) 14-15 credits |  |  |  |  |  |
| $\square$ | FYE 101S | 1 | Charger Success - Science | REQUIRED | FA |
| $\square$ |  | 3 | Intro to Computer Programming | See attached for choices |  |
| $\square$ |  | 4 | Biology or Chemistry | See attached for choices |  |
| $\square$ | $\begin{gathered} \text { MA } 281 \\ \text { (or MA 172) } \end{gathered}$ | $\begin{gathered} 3 \\ (4) \end{gathered}$ | Math Professional Applications (or Calculus B) | MA 113, 115, or Placement (or MA 171) | $\begin{gathered} \text { FA/SP } \\ \text { (FA/SP/SU) } \end{gathered}$ |
| $\square$ |  | 3 | Applied Statistics course | See attached for choices |  |
| Atmospheric \& Earth Science Core 17 credits |  |  |  |  |  |
| $\square$ | AES 103/103L | 4 | Environmental Earth Science + Lab |  | FA/SP |
| $\square$ | AES 104/ 104L | 4 | Weather \& Climate Change + Lab |  | FA/SP |
| $\square$ | AES 209 | 2 | Data Analysis Tools | AES 103, 104, and CS 102+ w/conc | FA/SP |
| $\square$ | AES 301 | 3 | Intro to Earth \& Atmos Physics | AES 103, 104, PH 101 or 111, MA 120 or 171 | FA/SP |
| $\square$ | AES 303 | 3 | Class/Physical Causes Climate | AES 103, 104, PH 101 or 111, MA 120 or 171 | SP |
| $\square$ | AES 498 | 1 | Research \& Prof Dev Capstone | Junior or Senior Standing (61+ credit hours) | FA/SP |
| Earth System Science Concentration 15 credits |  |  |  |  |  |
| $\square$ | AES 305 | 4 | Hydrology | AES 103, 104, MA 120 oR 171, and PH 101 or 111 | SP |
| $\square$ | $\begin{gathered} \text { AES } 312 \\ \text { (or AES } 321 \text { ) } \end{gathered}$ | 3 | Principles of Ecology (or Pollution Problems) | BYS 120 (AES 103, 104, CH 101 or 121, MA 120+, PH 101 or 111) | FA/SP |
| $\square$ | AES 313 | 3 | Geographic Information Systems | AES 103 and CS 102/103/104 | FA/SP |
| $\square$ | AES 370 | 3 | Introduction to Remote Sensing | AES 103, 104, CS 102/103/104, MA 120+, PH 101 or 111 | FA/SP |
| $\square$ | $\begin{gathered} \text { AES } 408 \\ \text { (or AES 409) } \end{gathered}$ | 3 | Python for GIS (or Sci Programming for Earth/Atmos) | AES 313 (AES 301, CS 102/103/104, MA 172, PH 112/115) | $\begin{gathered} \mathrm{SP} \\ (\mathrm{FA}) \end{gathered}$ |
| Earth System Science Concentration Electives Choose 17-18 credits: 6 credits must be 400+ level |  |  |  |  |  |
| AES 495 or AES 497 or AES 499 - Student may choose only one of these courses to count as a concentration elective. |  |  |  |  |  |
| AES 312, AES 321, AES 408, AES 409 - Each of these courses can be used to satisfy a concentration requirement or an elective requirement, but not both. |  |  |  |  |  |
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| General Electives |  |  |  |  |  |
| Elective courses can be taken from any department and do not have to be taken in your major or minor. |  |  |  |  |  |
| Total $=\mathbf{1 2 0 +}$ credits to graduate |  |  |  |  |  |
| 36 of the 120 credits must be taken at 300-level or higher. |  |  |  |  |  |

COLLEGE OF
SCIENCE
Atmospheric \& Earth Science, BS
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| Charger Foundations Choices |  |  |  |
| :---: | :---: | :---: | :---: |
| I. Freshman Composition | Choose 1 | College Writing I \& II (EH 101 + 102) <br> Intensive Writing \& Studio \& Freshman Comp II (EH 101S + 101L \& EH 102) <br> Honors English Seminar (EH 105; equivalent to EH 101 \& EH 102) <br> Accelerated College Writing (EH 103: equivalent to EH 101 \& EH 102) |  |
| II. Fine Arts | Choose 1 | Ancient to Medieval Art (ARH 100) Renaissance to Modern Art (ARH 101) World Art (ARH 103) Introduction to Drawing (ARS 160) Intro to Film Studies (FMA 123) Intro to Music Literature (MU 100) Theatre Appreciation (TH 122) |  |
| II. Humanities (Literature) | Choose 1 | Readings Literature/Culture I (EH 207) Readings Literature/Culture II (EH 208) Honors Literature/Culture I (EH 209) Honors Literature/Culture II (EH 210) Literature Without Borders (EH 241) | Mythology (EH 242) <br> Protest Literature (EH 243) <br> Heroes \&/or Monsters (EH 244) <br> Love \&/or Romance (EH 245) <br> Speculative Realities (EH 246) |
| II. Humanities (Non-Literature) | Choose 1 | Ancient to Medieval Art (ARH 100) <br> Renaissance to Modern Art (ARH 101) <br> World Art (ARH 103) <br> Introduction to Drawing (ARS 160) <br> Ancient \& Medieval Worlds (AMS 229) <br> Public Speaking (CM 113) <br> Intro to Film Studies (FMA 123) <br> Intro to Music Literature (MU 100) <br> Intro to Philosophy (PHL 101) | Intro to Philosophy (PHL 101) <br> Intro to Ethics (PHL 102) <br> Intro to Logic (PHL 103) <br> Science, Tech \& Human Values (PHL 150) <br> Theatre Appreciation (TH 122) <br> Intro to Women's Studies (WGS 200) <br> Foreign Language (WLC 101) <br> International Cinema (WLC 204) |
| III. Mathematics | Choose 1 | Math Professional Applications (MA 120) Calculus A (MA 171 or MA 171S) |  |
| III. Natural Sciences (Lab) Sequence | Choose 1 sequence | Physics w/ Calculus I (PH 111/114) and Physics w/ Calculus II (PH 112/115) General Physics I (PH 101/101L) and General Physics II (PH 102/102L) |  |
| IV. History | Choose 1 | World History I (HY 103) World History II (HY 104) | United States to 1877 (HY 221) United States Since 1877 (HY 222) |
| IV. Social \& Behavioral Sciences | Choose 2 | World Geography (AES 105) <br> Human Geography (AES 110) <br> Global systems \& Cultures (GS 200) <br> Macroeconomics (ECN 142) <br> Microeconomics (ECN 143) <br> American Gov't (PSC 101) <br> Politics \& Foreign Govt (PSC 102) | International Relations (PSC 260) <br> General Psychology (PY 101) <br> Life Span Development (PY 201) <br> Intro to Sociology (SOC 100) <br> Analysis of Social Problems (SOC 102) <br> Intro to Criminology (SOC 103) |
| Students must take one literature and one history course. <br> Students must also take either a second literature or history/social \& behavioral science course to complete a sequence. |  |  |  |
| Area II Sequence | Take a ${ }^{\text {nd }}$ Literature AND History or Social \& Behavioral Science |  |  |
| OR |  |  |  |
| Area IV Sequence | Take either $2^{\text {nd }}$ History OR $3^{\text {rd }}$ Social \& Behavioral Science AND Fine Arts or Non-Literature Humanities or Literature Humanities |  |  |
| Area V. Choices |  |  |  |
| Biology or Chemistry | Choose 1 | Organismal Biology + Lab (BYS 120/121) <br> Intro to Chemistry + Lab (CH 101/105) <br> General Chemistry I + Lab (CH 121/125) |  |
| Computer Programming | Choose 1 | Intro to Computers \& Programming (CS 100) Intro to C Programming (CS 102) Intro to Programming Using JAVA (CS 103) Intro to CS Using Python (CS 104) |  |
| Applied Statistics | Choose 1 | Elements of Statistics Analysis (MA 281) <br> Probability \& Statistics (MA 385) <br> Intro to Social Science Statistics (PSC 300) <br> Psychological Statistics (PY 300) <br> Statistics for Social Sciences (SOC 303) |  |
| Major Choices |  |  |  |
| Concentration Electives | Choose 17 Credits (9 @ 400+) | AES 305 Hydrology* <br> AES 313 Geographic Information Systems <br> AES 321 Pollution Problems <br> AES 352 Synoptic Meteorology* <br> AES 370 Intro to Remote Sensing <br> AES 402 Natural Disasters <br> AES 408 Python for GIS <br> AES 409 Scientific Programming for Earth \& Atmos <br> AES 410 Operational Weather Forecasting* <br> AES 414 Geospatial Applications <br> AES 420 Intro Atmospheric Chemistry \& Air Pollution | AES 441 Atmospheric Thermodynamics \& Cloud Physics AES 451 Atmospheric Fluid Dynamics I <br> AES 454 Forecasting Mesoscale Proc* <br> AES 461 Atmospheric Radiation I <br> AES 471 Radar Meteorology <br> AES 472 Satellite Meteorology* <br> AES 490 Special Topics in Earth \& Atmos <br> AES 495 Directed Study <br> AES 497 Undergrad Internship <br> AES 499 Undergrad Research |

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[^0]:    *MA 281 can be used to satisfy the Area $V$ Mathematics requirement or the Applied Statistics requirement, but not both.
    Strongly recommended.

