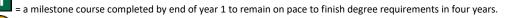


Northwest Missouri State University Department of Natural Sciences Physics –Geology Emphasis Bachelor of Science

| Term 1  | Course Title/Description   | Pre-requisite  | Cr Hrs                     | Milestone/Notes   |
|---|--|--|----------------------------|---|
| 17-117  | Precalculus  | Minimum ACT math score<br>of 22 OR minimum high<br>school GPA 3.5  | 5                          |   |
| 29-102  | Fund of Oral Communication   |  | 3                          |   |
| 77-101  | University Seminar   |  | 1                          |   |
|   | Digital Literacy   |  | 3                          |   |
| 24-114/115  | General Chemistry I & Lab  |  | 4                          |   |
|   |  | Total Hours  | 16                         |   |
| Term 2  | Course Title/Description   | Pre-requisite  | Cr Hrs                     | Milestone/Notes   |
| 44-141  | Computer Programming I   |  | 3                          |   |
| 10-111  | Composition I  |  | 3                          |   |
| 04-106/107  | Principles of Biology & Lab  |  | 4                          |   |
| 17-120  | Calculus I   | Precalculus Algebra OR<br>Precalculus AND<br>Trigonometry  | 4                          | 1   |
|   | Global Experience  |  | 3                          |   |
|   |  | Total Hours  | 17                         |   |
| Term 3  | Course Title/Description   | Pre-requisite  | Cr Hrs                     | Milestone/Notes   |
| 17-121  | Calculus II  | Calculus I   | 5                          |   |
|   | Humanities   |  | 3                          |   |
| 25-120/121  | Classical Physics I & Lab  | Calculus I   | 5                          | FALL only   |
|   | American Experiences   |  | 3                          |   |
|   |  | Total Hours  | 15                         |   |
| Term 4  | Course Title/Description   | Pre-requisite  | Cr Hrs                     | Milestone/Notes   |
| 17-321  | Calculus III   | Calculus II  | 4                          |   |
| 34-102  | Intro to American Government   |  | 3                          |   |
| 25-230/231  | Classical Physics II & Lab   | Classical Physics I & Lab<br>AND Calculus II   | 5                          | SPRING only   |
|   | Social & Behavioral Science  |  | 3                          |   |
|   |  | Total Hours  | 15                         |   |
|   |  |  |                            |   |
| Term 5  | Course Title/Description   | Pre-requisite  | Cr Hrs                     | Milestone/Notes   |
| 27-110/111  |  |  |                            |   |
| 1   | General Geology & Lab  |  | 4                          | 3   |
| 25-350  | General Geology & Lab  |  |                            |   |
| 25-350<br>27-440 OR                               |  | Classical Physics II & Lab Historical Geology  | 4                          | FALL ODD YEARS only Geology Elective  |
|   | General Geology & Lab Intro to Quantum Mechanics   | Classical Physics II & Lab   | 4                          | FALL ODD YEARS only   |
| 27-440 OR   | General Geology & Lab  Intro to Quantum Mechanics  Stratigraphy  | Classical Physics II & Lab   | 4<br>3<br>4                | FALL ODD YEARS only Geology Elective  |
| 27-440 OR<br>27-530                               | General Geology & Lab  Intro to Quantum Mechanics  Stratigraphy Sedimentology  | Classical Physics II & Lab<br>Historical Geology   | 4<br>3<br>4<br>4           | FALL ODD YEARS only Geology Elective FALL ODD YEARS only  |
| 27-440 OR<br>27-530<br>25-320/321 OR              | General Geology & Lab  Intro to Quantum Mechanics  Stratigraphy Sedimentology Classical Mechanics & Lab                            | Classical Physics II & Lab Historical Geology Classical Mechanics:   | 4<br>3<br>4<br>4           | FALL ODD YEARS only Geology Elective FALL ODD YEARS only Physics Electives  |
| 27-440 OR<br>27-530<br>25-320/321 OR<br>25-330 OR | General Geology & Lab  Intro to Quantum Mechanics  Stratigraphy Sedimentology  Classical Mechanics & Lab Electricity and Magnetism | Classical Physics II & Lab Historical Geology  Classical Mechanics: General Physics I & Lab  | 4<br>3<br>4<br>4<br>4<br>3 | FALL ODD YEARS only Geology Elective FALL ODD YEARS only Physics Electives Classical Mechanics: FALL  |
| 27-440 OR<br>27-530<br>25-320/321 OR<br>25-330 OR | General Geology & Lab  Intro to Quantum Mechanics  Stratigraphy Sedimentology  Classical Mechanics & Lab Electricity and Magnetism | Classical Physics II & Lab Historical Geology  Classical Mechanics: General Physics I & Lab AND Calculus II Electricity and Magnetism: Classical Physics II AND              | 4<br>3<br>4<br>4<br>4<br>3 | FALL ODD YEARS only  Geology Elective FALL ODD YEARS only  Physics Electives Classical Mechanics: FALL ODD YEARS only Electricity and Magnetism & Optics: FALL EVEN |
| 27-440 OR<br>27-530<br>25-320/321 OR<br>25-330 OR | General Geology & Lab  Intro to Quantum Mechanics  Stratigraphy Sedimentology  Classical Mechanics & Lab Electricity and Magnetism | Classical Physics II & Lab Historical Geology  Classical Mechanics: General Physics I & Lab AND Calculus II Electricity and Magnetism: Classical Physics II AND Calculus III | 4<br>3<br>4<br>4<br>4<br>3 | FALL ODD YEARS only  Geology Elective FALL ODD YEARS only  Physics Electives Classical Mechanics: FALL ODD YEARS only Electricity and Magnetism                     |
| 27-440 OR<br>27-530<br>25-320/321 OR<br>25-330 OR | General Geology & Lab  Intro to Quantum Mechanics  Stratigraphy Sedimentology  Classical Mechanics & Lab Electricity and Magnetism | Classical Physics II & Lab Historical Geology  Classical Mechanics: General Physics I & Lab AND Calculus II Electricity and Magnetism: Classical Physics II AND              | 4<br>3<br>4<br>4<br>4<br>3 | FALL ODD YEARS only  Geology Elective FALL ODD YEARS only  Physics Electives Classical Mechanics: FALL ODD YEARS only Electricity and Magnetism & Optics: FALL EVEN |



= a milestone course completed by end of year 2 to remain on pace to finish degree requirements in four years.

I = a milestone course completed by end of year 3 to remain on pace to finish degree requirements in four years.

= a milestone courses taken in final year to complete degree requirements.



Northwest Missouri State University Department of Natural Sciences Physics –Geology Emphasis Bachelor of Science

| Fine Art |             | 3     |  |
|----------|-------------|-------|--|
|          | Total Hours | 10-17 |  |

| Term 6  | Course Title/Description  | Pre-requisite   | Cr Hrs   | Milestone/Notes   |
|---|---|---|--|---|
| 27-212  | Historical Geology  | General Geology   | 4  |   |
| 25-352 OR   | Modern Physics  | Modern: Classical Physics II  | 3  | Modern: SPRING ODD  |
| 25-450  | Computational Physics   | & Lab   |  | YEARS only  |
|   |   | Classical Physics II & Lab  |  | Computational: SPRING   |
|   |   | AND Computer  |  | EVEN YEARS only   |
|   |   | Programming I   |  |   |
| 27-335 OR   | Physical Oceanography   | Oceanography: General   | 3  | Geology Elective  |
| 27-340 OR   | Introduction to Hydrogeology  | Science Requirement   | 3  | Oceanography: SPRING  |
| 27-510  | Geomorphology   | Hydrogeology: General   | 3  | EVEN YEARS only   |
|   |   | Geology AND Precalculus   |  | Hydrogeology: SPRING  |
|   |   | Algebra   |  | only  |
|   |   | Geomorphology: General  |  | Geomorphology: SPRING   |
|   |   | Geology   |  | EVEN YEARS only   |
| 25-360  | Quantum Mechanics   | Quantum: Introduction to  | 3  | Physics Electives   |
|   |   | Quantum OR Physical   |  | Quantum: SPRING EVEN  |
|   |   | Chemistry I & Lab AND   |  | YEARS only  |
|   |   | Calculus III  | _  |   |
| 17-361  | Differential Equations  | Calculus II   | 3  | SPRING only   |
| 29-102  | Fund. Of Oral Communication   |   | 3  |   |
|   |   | Total Hours   | 13-16  |   |
|   |   |   |  |   |
| Term 7  | Course Title/Description  | Pre-requisite   | Cr Hrs   | Milestone/Notes   |
| 27-220  | Mineralogy  | General Geology   | 4  |   |
| 27-220<br>25-350  | Mineralogy Intro to Quantum Mechanics   | General Geology Classical Physics II & Lab  | 4<br>3   | FALL ODD YEARS only   |
| 27-220<br>25-350<br>27-440 OR   | Mineralogy Intro to Quantum Mechanics Stratigraphy  | General Geology   | 4  | FALL ODD YEARS only Geology Elective  |
| 27-220<br>25-350<br>27-440 OR<br>27-530   | Mineralogy Intro to Quantum Mechanics Stratigraphy Sedimentology  | General Geology Classical Physics II & Lab Historical Geology   | 4<br>3<br>4<br>4                                   | FALL ODD YEARS only Geology Elective FALL ODD YEARS only  |
| 27-220<br>25-350<br>27-440 OR<br>27-530<br>25-320/321 OR  | Mineralogy Intro to Quantum Mechanics Stratigraphy Sedimentology Classical Mechanics & Lab  | General Geology Classical Physics II & Lab Historical Geology Classical Mechanics:  | 4<br>3<br>4<br>4<br>4                              | FALL ODD YEARS only Geology Elective FALL ODD YEARS only Physics Electives  |
| 27-220<br>25-350<br>27-440 OR<br>27-530<br>25-320/321 OR<br>25-330 OR   | Mineralogy Intro to Quantum Mechanics Stratigraphy Sedimentology Classical Mechanics & Lab Electricity and Magnetism  | General Geology Classical Physics II & Lab Historical Geology  Classical Mechanics: General Physics I & Lab   | 4<br>3<br>4<br>4<br>4<br>3                         | FALL ODD YEARS only  Geology Elective  FALL ODD YEARS only  Physics Electives  Classical Mechanics: FALL  |
| 27-220<br>25-350<br>27-440 OR<br>27-530<br>25-320/321 OR  | Mineralogy Intro to Quantum Mechanics Stratigraphy Sedimentology Classical Mechanics & Lab  | General Geology Classical Physics II & Lab Historical Geology  Classical Mechanics: General Physics I & Lab AND Calculus II   | 4<br>3<br>4<br>4                                   | FALL ODD YEARS only  Geology Elective FALL ODD YEARS only  Physics Electives Classical Mechanics: FALL ODD YEARS only   |
| 27-220<br>25-350<br>27-440 OR<br>27-530<br>25-320/321 OR<br>25-330 OR   | Mineralogy Intro to Quantum Mechanics Stratigraphy Sedimentology Classical Mechanics & Lab Electricity and Magnetism  | General Geology Classical Physics II & Lab Historical Geology  Classical Mechanics: General Physics I & Lab AND Calculus II Electricity and Magnetism:  | 4<br>3<br>4<br>4<br>4<br>3                         | FALL ODD YEARS only  Geology Elective FALL ODD YEARS only  Physics Electives Classical Mechanics: FALL ODD YEARS only Electricity and   |
| 27-220<br>25-350<br>27-440 OR<br>27-530<br>25-320/321 OR<br>25-330 OR   | Mineralogy Intro to Quantum Mechanics Stratigraphy Sedimentology Classical Mechanics & Lab Electricity and Magnetism  | General Geology Classical Physics II & Lab Historical Geology  Classical Mechanics: General Physics I & Lab AND Calculus II Electricity and Magnetism: Classical Physics II AND   | 4<br>3<br>4<br>4<br>4<br>3                         | FALL ODD YEARS only  Geology Elective FALL ODD YEARS only  Physics Electives Classical Mechanics: FALL ODD YEARS only Electricity and Magnetism: FALL EVEN  |
| 27-220<br>25-350<br>27-440 OR<br>27-530<br>25-320/321 OR<br>25-330 OR   | Mineralogy Intro to Quantum Mechanics Stratigraphy Sedimentology Classical Mechanics & Lab Electricity and Magnetism  | General Geology Classical Physics II & Lab Historical Geology  Classical Mechanics: General Physics I & Lab AND Calculus II Electricity and Magnetism: Classical Physics II AND Calculus III  | 4<br>3<br>4<br>4<br>4<br>3                         | FALL ODD YEARS only  Geology Elective FALL ODD YEARS only  Physics Electives Classical Mechanics: FALL ODD YEARS only Electricity and Magnetism: FALL EVEN YEARS only   |
| 27-220<br>25-350<br>27-440 OR<br>27-530<br>25-320/321 OR<br>25-330 OR   | Mineralogy Intro to Quantum Mechanics Stratigraphy Sedimentology Classical Mechanics & Lab Electricity and Magnetism  | General Geology Classical Physics II & Lab Historical Geology  Classical Mechanics: General Physics I & Lab AND Calculus II Electricity and Magnetism: Classical Physics II AND   | 4<br>3<br>4<br>4<br>4<br>3                         | FALL ODD YEARS only  Geology Elective FALL ODD YEARS only  Physics Electives Classical Mechanics: FALL ODD YEARS only Electricity and Magnetism: FALL EVEN YEARS only Optics: FALL EVEN YEARS                       |
| 27-220<br>25-350<br>27-440 OR<br>27-530<br>25-320/321 OR<br>25-330 OR<br>25-430                               | Mineralogy Intro to Quantum Mechanics Stratigraphy Sedimentology Classical Mechanics & Lab Electricity and Magnetism Optics   | General Geology Classical Physics II & Lab Historical Geology  Classical Mechanics: General Physics I & Lab AND Calculus II Electricity and Magnetism: Classical Physics II AND Calculus III  | 4<br>3<br>4<br>4<br>4<br>3<br>3                    | FALL ODD YEARS only  Geology Elective FALL ODD YEARS only  Physics Electives Classical Mechanics: FALL ODD YEARS only Electricity and Magnetism: FALL EVEN YEARS only   |
| 27-220<br>25-350<br>27-440 OR<br>27-530<br>25-320/321 OR<br>25-330 OR   | Mineralogy Intro to Quantum Mechanics Stratigraphy Sedimentology Classical Mechanics & Lab Electricity and Magnetism Optics Intro to Literature   | General Geology Classical Physics II & Lab Historical Geology  Classical Mechanics: General Physics I & Lab AND Calculus II Electricity and Magnetism: Classical Physics II AND Calculus III  | 4<br>3<br>4<br>4<br>4<br>3<br>3<br>3               | FALL ODD YEARS only  Geology Elective FALL ODD YEARS only  Physics Electives Classical Mechanics: FALL ODD YEARS only Electricity and Magnetism: FALL EVEN YEARS only Optics: FALL EVEN YEARS                       |
| 27-220<br>25-350<br>27-440 OR<br>27-530<br>25-320/321 OR<br>25-330 OR<br>25-430                               | Mineralogy Intro to Quantum Mechanics Stratigraphy Sedimentology Classical Mechanics & Lab Electricity and Magnetism Optics   | General Geology Classical Physics II & Lab Historical Geology  Classical Mechanics: General Physics I & Lab AND Calculus II Electricity and Magnetism: Classical Physics II AND Calculus III Optics: Calculus II  | 4<br>3<br>4<br>4<br>4<br>3<br>3<br>3               | FALL ODD YEARS only  Geology Elective FALL ODD YEARS only  Physics Electives Classical Mechanics: FALL ODD YEARS only Electricity and Magnetism: FALL EVEN YEARS only Optics: FALL EVEN YEARS                       |
| 27-220<br>25-350<br>27-440 OR<br>27-530<br>25-320/321 OR<br>25-330 OR<br>25-430                               | Mineralogy Intro to Quantum Mechanics Stratigraphy Sedimentology Classical Mechanics & Lab Electricity and Magnetism Optics  Intro to Literature Elective   | General Geology Classical Physics II & Lab Historical Geology  Classical Mechanics: General Physics I & Lab AND Calculus II Electricity and Magnetism: Classical Physics II AND Calculus III Optics: Calculus II  | 3<br>4<br>4<br>4<br>3<br>3<br>3<br>10-17           | FALL ODD YEARS only  Geology Elective FALL ODD YEARS only  Physics Electives Classical Mechanics: FALL ODD YEARS only Electricity and Magnetism: FALL EVEN YEARS only Optics: FALL EVEN YEARS only                  |
| 27-220<br>25-350<br>27-440 OR<br>27-530<br>25-320/321 OR<br>25-330 OR<br>25-430<br>10-220                     | Mineralogy Intro to Quantum Mechanics Stratigraphy Sedimentology Classical Mechanics & Lab Electricity and Magnetism Optics  Intro to Literature Elective  Course Title/Description                                       | General Geology Classical Physics II & Lab Historical Geology  Classical Mechanics: General Physics I & Lab AND Calculus II Electricity and Magnetism: Classical Physics II AND Calculus III Optics: Calculus II  Total Hours  Pre-requisite            | 3<br>4<br>4<br>4<br>3<br>3<br>3<br>10-17<br>Cr Hrs | FALL ODD YEARS only  Geology Elective FALL ODD YEARS only  Physics Electives Classical Mechanics: FALL ODD YEARS only Electricity and Magnetism: FALL EVEN YEARS only Optics: FALL EVEN YEARS                       |
| 27-220<br>25-350<br>27-440 OR<br>27-530<br>25-320/321 OR<br>25-330 OR<br>25-430                               | Mineralogy Intro to Quantum Mechanics Stratigraphy Sedimentology Classical Mechanics & Lab Electricity and Magnetism Optics  Intro to Literature Elective  Course Title/Description Petrology                             | General Geology Classical Physics II & Lab Historical Geology  Classical Mechanics: General Physics I & Lab AND Calculus II Electricity and Magnetism: Classical Physics II AND Calculus III Optics: Calculus II  | 3 4 4 3 3 3 3 10-17 Cr Hrs                         | FALL ODD YEARS only  Geology Elective FALL ODD YEARS only  Physics Electives Classical Mechanics: FALL ODD YEARS only Electricity and Magnetism: FALL EVEN YEARS only Optics: FALL EVEN YEARS only                  |
| 27-220<br>25-350<br>27-440 OR<br>27-530<br>25-320/321 OR<br>25-330 OR<br>25-430<br>10-220<br>Term 8<br>27-420 | Mineralogy Intro to Quantum Mechanics Stratigraphy Sedimentology Classical Mechanics & Lab Electricity and Magnetism Optics  Intro to Literature Elective  Course Title/Description Petrology Social & Behavioral Science | General Geology Classical Physics II & Lab Historical Geology  Classical Mechanics: General Physics I & Lab AND Calculus II Electricity and Magnetism: Classical Physics II AND Calculus III Optics: Calculus II  Total Hours  Pre-requisite Mineralogy | 3 4 4 3 3 3 3 10-17 Cr Hrs 4 3                     | FALL ODD YEARS only  Geology Elective FALL ODD YEARS only  Physics Electives Classical Mechanics: FALL ODD YEARS only Electricity and Magnetism: FALL EVEN YEARS only Optics: FALL EVEN YEARS only  Milestone/Notes |
| 27-220<br>25-350<br>27-440 OR<br>27-530<br>25-320/321 OR<br>25-330 OR<br>25-430<br>10-220                     | Mineralogy Intro to Quantum Mechanics Stratigraphy Sedimentology Classical Mechanics & Lab Electricity and Magnetism Optics  Intro to Literature Elective  Course Title/Description Petrology                             | General Geology Classical Physics II & Lab Historical Geology  Classical Mechanics: General Physics I & Lab AND Calculus II Electricity and Magnetism: Classical Physics II AND Calculus III Optics: Calculus II  Total Hours  Pre-requisite            | 3 4 4 3 3 3 3 10-17 Cr Hrs                         | FALL ODD YEARS only  Geology Elective FALL ODD YEARS only  Physics Electives Classical Mechanics: FALL ODD YEARS only Electricity and Magnetism: FALL EVEN YEARS only Optics: FALL EVEN YEARS only                  |

1

= a milestone course completed by end of year 1 to remain on pace to finish degree requirements in four years.



= a milestone course completed by end of year 2 to remain on pace to finish degree requirements in four years.

I = a milestone course completed by end of year 3 to remain on pace to finish degree requirements in four years.

= a milestone courses taken in final year to complete degree requirements.



## Northwest Missouri State University Department of Natural Sciences Physics –Geology Emphasis Bachelor of Science

| Total Hours |                                   |                            | 14-17 |                       |
|-------------|-----------------------------------|----------------------------|-------|-----------------------|
|             | Elective                          |                            | 2     |                       |
| 25-499      | Special Investigations in Physics |                            |       |                       |
| 25-489 OR   | Physics Practicum OR              | Permission of Instructor   | 2     |                       |
|             |                                   | Calculus III               |       |                       |
|             |                                   | Chemistry I & Lab AND      |       | YEARS only            |
|             |                                   | Quantum OR Physical        |       | Quantum: SPRING EVEN  |
| 25-360      | Quantum Mechanics                 | Quantum: Introduction to   | 3     | Physics Electives     |
|             |                                   | Geology                    |       | EVEN YEARS only       |
|             |                                   | Geomorphology: General     |       | Geomorphology: SPRING |
|             |                                   | Algebra                    |       | only                  |
|             |                                   | Geology AND Precalculus    |       | Hydrogeology: SPRING  |
| 27-510      | Geomorphology                     | Hydrogeology: General      | 3     | EVEN YEARS only       |
| 27-340 OR   | Introduction to Hydrogeology      | Science Requirement        | 3     | Oceanography: SPRING  |
| 27-335 OR   | Physical Oceanography             | Oceanography: General      | 3     | Geology Elective      |
|             |                                   | Programming I              |       |                       |
|             |                                   | AND Computer               |       | EVEN YEARS only       |
|             |                                   | Classical Physics II & Lab |       | Computational: SPRING |

= a milestone course completed by end of year 1 to remain on pace to finish degree requirements in four years.

= a milestone course completed by end of year 2 to remain on pace to finish degree requirements in four years.

I = a milestone course completed by end of year 3 to remain on pace to finish degree requirements in four years.

= a milestone courses taken in final year to complete degree requirements.