



**PHYSICS, GRADES 9-12**

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| EDUCATOR PREPARATION PROGRAM NAME<br><b>SOUTHEAST MISSOURI STATE UNIVERSITY</b> | EDUCATOR PREPARATION PROGRAM CODE<br><b>120120</b> |
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**INSTRUCTIONS**

Please complete Educator Preparation Program (EPP) Name & EPP Code above. The EPP Code may be located at <https://dese.mo.gov/sites/default/files/EPP-Code-Name.pdf>

**Certification Requirements:**

- **Course Number** – List the course number(s) for the course(s) or groups of competencies that align with the specific section of the requirements. It is possible to have more than one course or group listed.
- **Course Title** – List the course title(s) for the course(s) or groups of competencies that align with the specific section of the requirements. It is possible to have more than one course or group listed.
- **Semester Hours** – List the number of semester hours for each specific section. It is possible to use decimals (to the nearest tenth) to indicate partial use of a course to meet a requirement. The total number of semester hours must meet or exceed the minimum required number of semester hours.

Email the completed cover sheet, curriculum matrix, and advising/program information to [DESE.MoSPETransition@dese.mo.gov](mailto:DESE.MoSPETransition@dese.mo.gov) on or before the date established in the Transition Plan.

QUESTIONS: Contact Educator Preparation, 573-751-1668 or [DESE.MoSPETransition@dese.mo.gov](mailto:DESE.MoSPETransition@dese.mo.gov)

**A. Professional Requirements (Minimum of 26 semester hours)**

| 1. Content Planning and Delivery                                     |                |   |   |
|--|----------------|---|---|
|  | Course Number  | Course Title  | Semester Hours                          |
| a. Curriculum and Instructional Planning                             | ED280          | Introduction to Education as a Profession   | 0.5                                     |
|  | SE350          | Pedagogy 1 Principles of Effective Teaching in Middle and Secondary                         | 0.5                                     |
|  | SE365          | Pedagogy 2 Secondary School-Interdisciplinary Methods and Technology                        | 0.5                                     |
|  | SE385          | Pedagogy 3 Advanced Methods of Middle and Secondary Teaching                                | .25                                     |
|  | SE320<br>EF400 | Techniques of Teaching Science<br>Seminar in Educational Issues                             | 1<br>.25                                |
| b. Instructional Strategies and Techniques in Content Area Specialty | SE320          | Techniques of Teaching Science  | 1                                       |
|  | EF400          | Seminar in Educational Issues   | .25                                     |
| c. Assessment, Student Data, and Data-Based Decision-Making          | ED280          | Introduction to Education as a Profession   | .25                                     |
|  | SE350          | Pedagogy 1 Principles of Effective Teaching in Middle and Secondary                         | .5                                      |
|  | SE365          | Pedagogy 2 Secondary School-Interdisciplinary Methods and Technology                        | .5                                      |
|  | SE385          | Pedagogy 3 Advanced Methods of Middle and Secondary Teaching                                | .5                                      |
|  | SE320          | Techniques of Teaching Science  | .25                                     |
| d. Strategies for Content Literacy                                   | SE320          | Techniques of Teaching Science  | .25                                     |
| e. Critical Thinking and Problem Solving                             | SE350          | Pedagogy 1 Principles of Effective Teaching in Middle and Secondary                         | .25                                     |
|  | SE365          | Pedagogy 2 Secondary School-Interdisciplinary Methods and Technology                        | .25                                     |
|  | SE385          | Pedagogy 3 Advanced Methods of Middle and Secondary Teaching                                | .25                                     |
|  | SE320          | Techniques of Teaching Science  | .5                                      |
| f. English Language Learning   | SE385          | Pedagogy 3 Advanced Methods of Middle and Secondary Teaching                                | .25                                     |
|  | SE307          | Content Literacy Methods for Middle and High School   | Hours are counted under Second Literacy |
|  | SE390          | Instructional Interventions for Middle and High School Students with Special Literacy Needs |   |
| 2. Individual Student Needs  |                |   |   |
|  | Course Number  | Course Title  | Semester Hours                          |
| a. Psychological Development of the Child and Adolescent             | PY222          | Development of the Adolescent   | 3                                       |
| b. Psychology/Education of the Exceptional Child                     | EX390          | Psychology and Education of the Exceptional Child   | 3                                       |

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| c. Differentiated Learning  | ED280                | Introduction to Education as a Profession<br>Pedagogy 1 Principles of Effective Teaching in Middle and Secondary<br>Pedagogy 2 Secondary School-Interdisciplinary Methods and Technology<br>Pedagogy 3 Advanced Methods of Middle and Secondary Teaching                                  | .25                   |
|   | SE350                |   | .25                   |
|   | SE365                |   | .5                    |
|   | SE385                |   | .5                    |
| d. Classroom Management   | SE350                | Pedagogy 1 Principles of Effective Teaching in Middle and Secondary<br>Pedagogy 2 Secondary School-Interdisciplinary Methods and Technology<br>Pedagogy 3 Advanced Methods of Middle and Secondary Teaching<br>Seminar in Educational Issues  | .5                    |
|   | SE365                |   | .5                    |
|   | SE385                |   | .5                    |
|   | EF400                |   | .25                   |
| e. Cultural Diversity   | ED280                | Introduction to Education as a Profession<br>Pedagogy 1 Principles of Effective Teaching in Middle and Secondary<br>Pedagogy 2 Secondary School-Interdisciplinary Methods and Technology<br>Pedagogy 3 Advanced Methods of Middle and Secondary Teaching                                  | .25                   |
|   | SE350                |   | .5                    |
|   | SE365                |   | .25                   |
|   | SE385                |   | .25                   |
| f. Educational Psychology   | SE365                | Pedagogy 2 Secondary School-Interdisciplinary Methods and Technology<br>Pedagogy 3 Advanced Methods of Middle and Secondary Teaching  | .25                   |
|   | SE385                |   | .25                   |
| <b>3. Schools and the Teaching Profession</b>   |                      |   |                       |
|   | <b>Course Number</b> | <b>Course Title</b>   | <b>Semester Hours</b> |
| a. Consultation and Collaboration   | ED280                | Introduction to Education as a Profession<br>Pedagogy 1 Principles of Effective Teaching in Middle and Secondary<br>Pedagogy 2 Secondary School-Interdisciplinary Methods and Technology<br>Pedagogy 3 Advanced Methods of Middle and Secondary Teaching<br>Seminar in Educational Issues | .25                   |
|   | SE350                |   | .5                    |
|   | SE365                |   | .25                   |
|   | SE385                |   | .25                   |
|   | EF400                |   | .25                   |
| b. Legal/Ethical Aspects of Teaching  | ED280                | Introduction to Education as a Profession<br>Pedagogy 2 Secondary School-Interdisciplinary Methods and Technology   | .5                    |
|   | SE365                |   | 1                     |
| <b>4. Secondary Literacy (Minimum of six semester hours)</b>  |                      |   |                       |
|   | <b>Course Number</b> | <b>Course Title</b>   | <b>Semester Hours</b> |
| a. Reading and Writing in the Content Area  | SE307                | Content Literacy Methods for Middle and High School   | 3                     |
| b. Instructional Interventions for Students with Reading Deficits   | SE390                | Instructional Interventions for Middle and High School Students with Special Literacy Needs   | 3                     |
| <b>Professional Requirements - Total Semester Hours</b>   |                      |   | <b>28</b>             |
| <b>B. Field and Clinical Experiences (Minimum of ten semester hours)</b>  |                      |   |                       |
|   | <b>Course Number</b> | <b>Course Title</b>   | <b>Semester Hours</b> |
| 1. Early Field Experiences (Minimum of one semester hour with a minimum of 30 clock hours)                        | ED280                | Introduction to Education as a Profession   | 1                     |
| 2. Mid-Level Field Experiences (Minimum of one semester hour with a minimum of 45 clock hours)                    | SE355                | Field Experience  | 3                     |
|   | SE380                | Advanced Field Experience   | 3                     |
| 3. Culminating Clinical Experiences (Minimum of eight semester hours with a minimum of 12 weeks in one placement) | SE465                | Middle and Secondary Student Teaching<br>Field Experience   | 12                    |
| <b>Field and Clinical Experiences - Total Semester Hours</b>  |                      |   | <b>19</b>             |
| <b>C. Physics Content Knowledge Area (Minimum of 35 semester hours)</b>   |                      |   |                       |
|   | <b>Course Number</b> | <b>Course Title</b>   | <b>Semester Hours</b> |
| 1. History/Philosophy of Science and Technology (three semester hours)  | UI422                | Scientific Reasoning  | 3                     |
| 2. Physics Coursework – Minimum of 20 semester hours which must include:  |                      |   |                       |
| a. Mechanics  | PH230/030            | General Physics I with lab  | 3                     |
| b. Electricity and Magnetism  | PH231/031            | General Physics II with lab   | 5                     |

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| c. Heat, Sound, and Light   | PH230/030   | General Physics I with lab  | 2  |
| d. Atomic or Modern Physics   | PH360   | Modern Physics  | 3  |
| e. Physics Electives  | PH345 AND<br><u>4 hours from:</u><br>EP100 OR<br>EP240 OR<br>EP261 OR<br>EP262 OR<br>EP263 OR<br>EP305 OR<br>EP310 OR<br>EP462 OR<br>PH341 OR<br>PH370 OR<br>PH371 OR<br>PH473 OR<br>PH478/479 OR<br>PH570 OR<br>EP340 OR<br>PH328 OR | Experimental Methods AND<br><br>Physics & Engineering Concepts<br>Circuit Analysis<br>Engineering Mechanics – Statics<br>Engineering Mechanics – Dynamics<br>Mechanics of Materials<br>Digital and Analog System Design<br>Microcontroller and Embedded Systems<br>Materials Science<br>Optics<br>Mechanics<br>Electromagnetics<br>Quantum Mechanics<br>Undergraduate Research<br>Mathematical Physics<br>Electronic Circuits<br>Energy | 3<br><br>3<br>4<br>3<br>3<br>4<br>3<br>3<br>3<br>3<br>3<br>3<br>3<br>3<br>1-2<br>3<br>4<br>3 |
| 3. Additional Science Coursework – Minimum of 12 semester hours which must include: |   |   |  |
| a. Chemistry  | CH181/001/081<br>OR<br>CH185/005/085<br>AND<br>CH186  | Basic Principles of Chemistry (5)<br>OR<br>General Chemistry I (5)<br>and<br>General Chemistry II (3)   | 5-8  |
| b. Biology  | BS108 OR<br>BS218   | Biology for Living OR<br>Biological Science: A Process Approach   | 3  |
| c. Earth Science  | UI318 OR<br>GO110 OR<br>GO220 OR<br>GO320   | Earth Science: A Process Approach OR<br>Physical Geology OR<br>Meteorology OR<br>Oceanography   | 3  |
| d. Environmental Science  | BI332 OR<br>GO305 OR<br>UI372 OR<br>UI360   | General Ecology OR<br>Environmental Geoscience OR<br>Earthquakes & Society OR<br>Recycling & Waste Management   | 3  |
| <b>Content Knowledge Area - Total Semester Hours</b>                                |   |   | <b>37-41</b>   |

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