

## Department of Education & School Psychology

### Curriculum Content—Physical Science Dual Field Licensure

#### BS INTERDISCIPLINARY PHYSICS MAJOR

*With an interdisciplinary focus on Chemistry*

#### OAE Tests – Chemistry (009) and Physics (035)

| Course #    | Course Title                                    | Hours | Gr. | Sem.   |
|-------------|---|-------|-----|--------|
| PH 135/135L | Physics I and Lab                               | 5     |     | Fall   |
| PH 136/136L | Physics II and Lab                              | 5     |     | Spring |
| PH 246      | Modern Physics                                  | 3     |     | Fall   |
| PH 247      | Modern Physics Laboratory                       | 1     |     | Fall   |
| PH 315/315L | Classical Mechanics and Workshop                | 4     |     |        |
| PH 347      | Advanced Laboratory                             | 2     |     |        |
| PH 365/365L | Electricity and Magnetism and Workshop          | 4     |     |        |
| PH 408      | Senior Research or Design Project               | 2     |     |        |
| PH 445/445L | Quantum Physics and Workshop                    | 4     |     |        |
| EP 217      | Mathematical methods of Physics and Engineering | 3     |     | Spring |
| EP 260/260L | DC/AC Circuits and Lab                          | 4     |     |        |
| EP 451/451L | Numerical Physics and Workshop                  | 4     |     |        |

|             |                              |   |  |        |
|-------------|------------------------------|---|--|--------|
| CH 141/143* | General Chemistry I and Lab  | 5 |  | Fall   |
| CH 142/144  | General Chemistry II and Lab | 5 |  | Spring |
| CH 221/223  | Organic Chemistry I and Lab  | 4 |  | Fall   |
| CH 222/224  | Organic Chemistry II and Lab | 4 |  | Spring |
| CH 431      | General Biochemistry         | 4 |  | Spring |

|            |                                    |   |  |  |
|------------|------------------------------------|---|--|--|
| BL 155/156 | Principles of Biology I and II     | 6 |  |  |
| BL 157/158 | Principles of Biology Lab I and II | 2 |  |  |

|          |                                     |   |  |      |
|----------|-------------------------------------|---|--|------|
| PH 115/L | Environmental Earth Science and Lab | 4 |  | Fall |
|----------|-------------------------------------|---|--|------|

|        |                                    |   |  |  |
|--------|------------------------------------|---|--|--|
| MT 135 | Calculus and Analytic Geometry I   | 4 |  |  |
| MT 136 | Calculus and Analytic Geometry II  | 4 |  |  |
| MT 233 | Calculus and Analytic Geometry III | 4 |  |  |

|                    |                                 |   |  |                    |
|--------------------|---------------------------------|---|--|--------------------|
| <b>Select One:</b> |                                 |   |  |                    |
| CH 361             | Introductory Physical Chemistry | 3 |  | Fall               |
| CH 367             | Physical Chemistry I Lab        | 2 |  | Spring and Fall    |
| CH 365             | Physical Chemistry I            | 3 |  | Fall               |
| CH 367             | Physical Chemistry I Lab        | 2 |  | Spring & Fall      |
| CH 366             | Physical Chemistry II           | 3 |  | Every other Spring |
| CH 368             | Physical Chemistry II Lab       | 2 |  |                    |

#### NOTES:

\*CH 151/153 (5 credits) may substitute for CH 141-144 with Chair's approval.

The above program with 30 credit hours of lower division CH and BL plus 5-8 credit hours of upper division chemistry plus earth science substantially exceeds the requirements for a BS in Interdisciplinary Physics. The BS in Interdisciplinary Physics only requires 24 credit hours of lower division CH and BL courses.

Revised FEB 2019