

SOUTH DAKOTA BOARD OF REGENTS ACADEMIC AFFAIRS FORMS

Substantive Program Modification Form

4/28/2023

| UNIVERSITY: | SDSU |
|-------------------------------------|----------------------------|
| CURRENT PROGRAM DEGREE: | Bachelor of Science (B.S.) |
| CURRENT PROGRAM MAJOR/MINOR: | Physics |
| CURRENT SPECIALIZATION | N/A |
| CIP CODE: | 40.0801 |
| UNIVERSITY DEPARTMENT: | Physics |
| BANNER DEPARTMENT CODE: | SPHY |
| UNIVERSITY COLLEGE: | Natural Science |
| BANNER COLLEGE CODE: | 3T |

University Approval

To the Board of Regents and the Executive Director: I certify that I have read this proposal, that I believe it to be accurate, and that it has been evaluated and approved as provided by university policy.

Dennis D. Hedge

| | Vice President of Academic Affairs | or | | _ | Date |
|-------------|--|-------------|-------------|-------------------|-----------------------|
| | President of the University | | | | |
| | | | | | |
| 1. | This modification addresses a change in: | | | | |
| \boxtimes | Total credits required within the discipline | \boxtimes | Tota | al credits of sup | portive course work |
| \boxtimes | Total credits of elective course work | | Tota | al credits requir | ed for program |
| | Program name | | Exis | sting specializat | tion |
| | CIP Code | | Oth | er (explain belo | ow) |
| 2. | Effective date of change: 2023-2024 Academ | ic Yea | ır | | |
| 3. | Program Degree Level: Associate □ Bach | elor's | \boxtimes | Master's □ | Doctoral □ |
| 4. | Category: Certificate □ Specialization □ | Mino | or 🗆 | Major ⊠ | |
| 5. | If a name change is proposed, the change wi | ill occı | ır: | | |
| | \square On the effective date for all students | | | | |
| | \Box On the effective date for students new to the | e prog | ram (| enrolled studen | ts will graduate from |
| | existing program) | | | | |
| | Proposed new name: | | | | |
| 6 | Is the pregram being modified associated wit | th a cr | irronf | articulation o | groomont? Vac 🗆 |

- 6. Is the program being modified associated with a current articulation agreement? Yes \Boxed No X
 - a. If yes, will the articulation agreement need to be updated with the partner institution following the approve of the program change? Please explain:
- 7. Primary Aspects of the Modification:

| Pref. Num. Title | Cr. Hrs. | Pref. | Num. | Title | Cr. Hrs. |
|--|----------|----------------|-----------|-----------------------------------|-----------|
| Systems General Education Requirements | 33 | Systems | General E | ducation Requirements | 25 |
| Systems General Education Requirements – Electives | 12 | Systems | General E | ducation Requirements – Electives | 21 |

| | | Existing Curriculum | ~ | | | ed Curriculum (<mark>highlight changes</mark>) | ~ | |
|----------|------------|---|----------|--|-------------------------|--|----------------|--|
| Pref. | Num. | Title | Cr. Hrs. | Pref. | Num. | Title | Cr. Hrs | |
| | | | | | | SGR #1 | 3 | |
| | | | | | | SGR #1 | 3 | |
| | | 0.00 | | | | SGR #2 | 3 | |
| | | SGR #3 | 3 | | | SGR #3 | 3 | |
| | | SGR #3 | 3 | | | SGR #3 | 3 | |
| | | SGR #4 | 3 | | | SGR #4 | 3 | |
| | | SGR #4 | 3 | | | SGR #4 | 3 | |
| | | | | | | | | |
| | | ducation Requirements – Required | 21 | | | ducation Requirements – Required | 4 | |
| ENGL | 101 | Composition I (SGR #1) | 3 | ENGL | 101 | Composition I (SGR #1) | <mark>3</mark> | |
| ENGL | 201 | Composition II (3) (SGR #1) | 3 | ENGL | 201 | Composition II (3) (SGR #1) | <mark>3</mark> | |
| OR | | | | OR | | | | |
| ENGL | 277 | Technical Writing in Engineering (3) (SGR #1) | | ENGL | 277 | Technical Writing in Engineering (3) (SGR #1) | | |
| CMST | 101 | Fundamentals of Speech (SGR #2) | 3 | CMST | 101 | Fundamentals of Speech (SGR #2) | 3 | |
| MATH | 123 | Calculus (SGR #5) | 4 | MATH | 123 | Calculus (SGR #5) | 4 | |
| PHYS | 111-111L | Introduction to Physics I & Lab (4,0) | 8 | PHYS | 111-111 L | Introduction to Physics I & Lab (3,1) | | |
| AND | | (SGR #6) | | AND | | (SGR #6) | | |
| PHYS | 113-113L | Introduction to Physics II & Lab (4,0) |) | PHYS | 113-113L | Introduction to Physics II & Lab (3,1) | | |
| OR | | (SGR #6) | | OR | | (SGR #6) | | |
| PHYS | 211-211L | University Physics I & Lab (4,0) | | PHYS | 211-211L | | | |
| AND | | (SGR #6) | | AND | | #6) (Major Requirement) | | |
| PHYS | 213-213L | University Physics II & Lab (4,0) | | PHYS | 213-213L | | | |
| | | (SGR #6) | | | | (SGR #6) (Major Requirement) | | |
| | nent Requi | | 3 | | <mark>nent Requi</mark> | | <mark>-</mark> | |
| | | credits of coursework beyond SGRs, | | Additional required credits of coursework beyond SGRs, | | | | |
| Major, a | nd Support | | | Major, a | and Support | | | |
| | | Natural Sciences (10+) | 0 | | | Natural Sciences (10+) | Q | |
| | | Satisfying coursework must include | | | | Satisfying coursework must include | | |
| | | - at least two classes with laboratory | | | | -at least two classes with laboratory | | |
| | | components | | | | components | | |
| | | - at least two different prefixes | | | | at least two different prefixes | | |
| | | (MATH and STAT courses do not count | | | | (MATH and STAT courses do not count | | |
| | | toward the Science requirement.) | | | | toward the Science requirement.) (6 credits of SGR #6 are counted toward | | |
| | | (6 credits of SGR #6 are counted toward | | | | this goal and 4 credits of major | | |
| | | this goal and 4 credits of major coursework) | | | | eoursework) | | |
| AHSS | 111 | Introduction to Global Citizenship and | 3 | AHSS | 111 | Introduction to Global Citizenship and | 3 | |
| 711100 | 111 | Diversity | | | 111 | Diversity | _ | |
| | | One declared minor outside of the | _ | | | One declared minor outside of the | _ | |
| | | major prefix OR a second major OR a | | | | major prefix OR a second major OR a | - | |
| | | teaching specialization. The minor | ı | | | teaching specialization. The minor | | |
| | | may be a traditional minor within one | | | | may be a traditional minor within one | | |
| | | department or it may be | | | | department or it may be | | |
| | | interdisciplinary involving more than | | | | interdisciplinary involving more than | | |
| | | one department. The minor can be in | | | | one department. The minor can be in a | | |
| | | | | | | different college. The minor must be | | |
| | | a different college. The minor must be declared no later than the student's | | | | declared no later than the student's | | |
| | | | | | | third semester of enrollment. | | |
| | | third semester of enrollment. | | | - | | | |
| | | Capstone course within major | - | | | Capstone course within major | _ | |
| | | PHYS 490 Seminar | | | | PHYS 490 Seminar | | |
| | | 33 Upper Division Credits (300-400 | - | | | 33 Upper Division Credits (300-400 | _ | |
| | | level coursework inside and outside | | | | level coursework inside and outside of | | |
| N | | of the major) | 0.4 | N/ | <u> </u> | the major) | 94 | |
| | Requiremen | nts | 84 | Major Requirements | | | | |
| Major Co | | G 1.01 ' Y | 43 | Major C | | 0 101 1 | 53 | |
| CHEM | 112 | General Chemistry I | 3 | CHEM | 112 | General Chemistry I | 3 | |

| | _ | Existing Curriculum | | | | ed Curriculum (<mark>highlight changes</mark>) | |
|-------------------|-------------------|--|-----------|---|----------------------|---|----------|
| Pref. | Num. | Title | Cr. Hrs. | | Num. | Title | Cr. Hrs. |
| CHEM | 112L | General Chemistry I Lab | 1 | CHEM | 112L | General Chemistry I Lab | 1 |
| CHEM | 114 | General Chemistry II | 3 | CHEM | 114 | General Chemistry II | 3 |
| CHEM | 114L | General Chemistry II Lab | 1 | CHEM | 114L | General Chemistry II Lab | 1 |
| EE | 216 | Linear Circuits I & Lab | 3 | EE | 216 | Linear Circuits I & Lab | 3 |
| EE | 216L | Linear Circuits I Lab | 1 | EE | 216L | Linear Circuits I Lab | 1 |
| MATH | 125 | Calculus II | 4 | MATH | 125 | Calculus II | 4 |
| MATH | 225 | Calculus III | 4 | MATH | 225 | Calculus III | 4 |
| MATH | 321 | Differential Equations | 3 | MATH | 321 | Differential Equations | 3 |
| PHYS | 111-111L | | | PHYS | 111-111L | | |
| AND | 111 1112 | (4,0) (SGR #6) | | AND | 111 1112 | (4,0) (SGR #6) | |
| PHYS | 113-113L | | | PHYS | 113-113 L | Introduction to Physics II & Lab (4,0) | |
| OR | | (SGR #6) | | OR | | (SGR #6) | |
| PHYS | 211-211L | | | <mark>PHYS</mark> | 211 211L | University Physics I & Lab (4,0) | |
| AND | 212 2121 | (SGR #6) | | AND | 212 2121 | (SGR #6) | |
| PHYS | 213-213L | | | PHYS | 213-213L | University Physics II & Lab (4,0) (SGR #6) | |
| DIIVC | 110 | (SGR #6) | 1 | PHYS | 110 | <u>(</u> | 1 |
| PHYS | 119 | First Year Seminar in Physics | 1 | PHYS | 119 211 | First Year Seminar in Physics University Physics I (SGR #6) | 1 4 |
| | | | | PHYS | 211L | University Physics I (SGR #6) | 1 |
| | | | | PHYS | 213 | University Physics II (SGR #6) | 4 |
| | | | | PHYS | 213L | University Physics II Lab (SGR #6) | 1 |
| PHYS | 316 | Measurement Theory and Experiment | 2 | PHYS | 316 | Measurement Theory and Experiment | 1 |
| | | Design | | | | Design | _ |
| PHYS | 316L | Measurement Theory and Experiment | 0 | PHYS | 316L | Measurement Theory and Experiment | 1 |
| | | Design Lab | | | | Design Lab | |
| PHYS | 331 | Introduction to Modern Physics | 3 | PHYS | 331 | Introduction to Modern Physics | 3 |
| PHYS | 341 | Thermodynamics | 2 | PHYS | 341 | Thermodynamics | 2 |
| PHYS | 343 | Statistical Physics | 2 | PHYS | 343 | Statistical Physics | 2 |
| PHYS | 421 | Electromagnetism | 4 | PHYS | 421 | Electromagnetism | 4 |
| PHYS | 451 490 | Classical Mechanics | 4 | PHYS PHYS | 451 490 | Classical Mechanics | 4 |
| PHYS Physics I | 490 Requiremen | Seminar (Capstone) | 5 | | | Seminar (Capstone) | 5 |
| CSC | 150 | Computer Science I | 3 | Physics Requirements CSC 150 Computer Science I | | | |
| PHYS | 318 | Advanced Laboratory I | 2 | PHYS | 318 | Advanced Laboratory I | 3 2 |
| | Technical E | | 36 | | Technical E | | 36 |
| | | group based on career objectives. | 36 | Select or | 36 | | |
| | | nal and Applied Physics | | _ | | nal and Applied Physics | |
| MATH | 331 | Advanced Engineering Math (3) | 3-4 | MATH | 331 | Advanced Engineering Math (3) | 3-4 |
| OR | | | | OR | | | |
| PHYS | 481 | Mathematical Physics (4) | | PHYS | 481 | Mathematical Physics (4) | |
| OR | 201 | | | OR | 201 | | |
| STAT | 381 | Intro to Probability & Statistics (3) | 1 | STAT | 381 | Intro to Probability & Statistics (3) | 1 |
| PHYS | 418 | Advanced Lab II | 1 | PHYS | 418 | Advanced Lab II | 1 |
| PHYS | 471 | Quantum Mechanics | 4 | PHYS | 471 | Quantum Mechanics | 4 8-9 |
| | | Free Electives Technical Electives | 8-9 19 | | | Free Electives Technical Electives | 19 |
| | | Up to a total of 3 credits may be | 17 | | | • Up to a total of 3 credits may be | 17 |
| | | NE/PHYS x94, x96, x98 total | | | | NE/PHYS x94, x96, x98 total | |
| | | • Technical electives will be selected | | | | • Technical electives will be selected | |
| | | from the following list of approved | | | | from the following list of approved | |
| | | courses. Any departures from this | | | | courses. Any departures from this | |
| | | list must be approved by the Head | | | | list must be approved by the Head of | |
| | | of the Physics Department. One | | | | the Physics Department. One may | |
| | | may not count a specific course | | | | not count a specific course required | |
| | | required for an elective group as | | | | for an elective group as also counting | ; |
| | | also counting towards elective credit | | | | towards elective credit requirements | |
| | <u> </u> | requirements of the elective group. | | | | of the elective group. | |

| Ducf | Marina | Existing Curriculum | Cr. Hrs. | Duct | | ea Curricuium (<mark>nigniigni cnanges</mark>) | |
|-------|--------|--|----------|-------|------|--|----------|
| Pref. | Num. | Title | Cr. Hrs. | Prei. | Num. | Title | Cr. Hrs. |
| | | o CHEM 332 - Analytical | | | | o CHEM 332 - Analytical | |
| | | Chemistry (COM) Credits: 3 | | | | Chemistry (COM) Credits: 3 | |
| | | o CHEM 332L - Analytical | | | | o CHEM 332L - Analytical | |
| | | Chemistry Lab (COM) Credits: 1 | | | | Chemistry Lab (COM) Credits: 1 | |
| | | EE 218 - Linear Circuits II | | | | o EE 218 - Linear Circuits II | |
| | | Credits: 3 | | | | Credits: 3 | |
| | | o EE 218L - Linear Circuits II Lab | | | | o EE 218L - Linear Circuits II Lab | |
| | | Credits: 1 | | | | Credits: 1 | |
| | | o EE 222 - Energy Conversion | | | | o EE 222 - Energy Conversion | |
| | | Credits: 3 | | | | Credits: 3 | |
| | | o EE 222L - Energy Conversion | | | | EE 222L - Energy Conversion | |
| | | Lab Credits: 1 | | | | Lab Credits: 1 | |
| | | • EE 320 - Electronics I (COM) | | | | • EE 320 - Electronics I (COM) | |
| | | | | | | | |
| | | Credits: 3 | | | | Credits: 3 | |
| | | o EE 320L - Electronics I Lab | | | | o EE 320L - Electronics I Lab | |
| | | (COM) Credits: 1 | | | | (COM) Credits: 1 | |
| | 1 | o EM 321 - Mechanics of Materials | 5 | | | o EM 321 - Mechanics of Materials | |
| | | (COM) Credits: 3 | | | | (COM) Credits: 3 | |
| | 1 | EM 331 - Fluid Mechanics | | | | o EM 331 - Fluid Mechanics | |
| | 1 | (COM) Credits: 3 | | | | (COM) Credits: 3 | |
| | | o GE 121 - Engineering Design | | | | o GE 121 - Engineering Design | |
| | | Graphics I Credits: 1 | | | | Graphics I Credits: 1 | |
| | | o GE 123 - Computer Aided | | | | o GE 123 - Computer Aided | |
| | | Drawing Credits: 1 | | | | Drawing Credits: 1 | |
| | | o MATH 315 - Linear Algebra | | | | • MATH 315 Linear Algebra | |
| | | (COM) Credits: 3 | | | | (COM) Credits: 3 | |
| | | o MATH 331 - Advanced | | | | o MATH 331 - Advanced | |
| | | | | | | | |
| | | Engineering Mathematics (COM) | ' | | | Engineering Mathematics (COM) | |
| | | Credits: 3 | | | | Credits: 3 | |
| | | o MATH 374 - Scientific | | | | o MATH 374 - Scientific | |
| | | Computation I Credits: 3 | | | | Computation I Credits: 3 | |
| | | o ME 415 - Heat Transfer Credits: | | | | MATH 412 – Linear Algebra | |
| | | 3 | | | | (COM) Credits: 3 | |
| | | o NE/PHYS 437 - Foundations of | | | | o ME 415 - Heat Transfer Credits: 3 | |
| | | Health Physics Credits: 3 | | | | o NE/PHYS 437 - Foundations of | |
| | | NE 435 - Introduction to Nuclear | | | | Health Physics Credits: 3 | |
| | | Engineering Credits: 3 | | | | o NE 435 - Introduction to Nuclear | |
| | | o NE 494 - Internship (COM) | | | | Engineering Credits: 3 | |
| | | Credits: 1-3 | | | | o NE 494 - Internship (COM) | |
| | | NE 498 - Undergraduate | | | | Credits: 1-3 | |
| | | Research/Scholarship (COM) | | | | NE 498 - Undergraduate | |
| | 1 | Credits: 1-3 | | | | Research/Scholarship (COM) | |
| | 1 | o PHIL 200 - Introduction to Logic | | | | Credits: 1-3 | |
| | | | | | | o PHIL 200 - Introduction to Logic | |
| | 1 | (COM) [SGR #4] Credits: 3 | | | | | |
| | | o PHYS 185 - Solar System | | | | (COM) [SGR #4] Credits: 3 | |
| | 1 | Astronomy (COM) [SGR #6] | | | | o PHYS 185 - Solar System | |
| | 1 | Credits: 3 | | | | Astronomy (COM) [SGR #6] | |
| | | o PHYS 185L - Solar System | | | | Credits: 2 | |
| | 1 | Astronomy Lab (COM) [SGR | | | | o PHYS 185L - Solar System | |
| | 1 | #6] Credits: 0 | | | | Astronomy Lab (COM) [SGR #6] | |
| | | o PHYS 187 - Stars, Galaxies, and | | | | Credits: 1 | |
| | 1 | Cosmology (COM) [SGR #6] | | | | o PHYS 187 - Stars, Galaxies, and | |
| | 1 | Credits: 3 | | | | Cosmology (COM) [SGR #6] | |
| | | o PHYS 187L - Stars, Galaxies, | | | | Credits: 2 | |
| | 1 | and Cosmology Lab (COM) | | | | o PHYS 187L - Stars, Galaxies, and | |
| | | [SGR #6] Credits: 0 | | | | Cosmology Lab (COM) [SGR #6] | |
| | 1 | o PHYS 361 - Optics (COM) | | | | Credits: 1 | |
| | 1 | Credits: 3 | | | | o PHYS 361 - Optics (COM) | |
| | | Cieurs. 3 | | | | | |
| | | | | | | Credits: 3 | |

| D C | N.T | Existing Curriculum | C II | D C | | ma | C II |
|----------|-------------|--|----------|-------------|------------|--|----------|
| Pref. | Num. | | Cr. Hrs. | Pref. | Num. | | Cr. Hrs. |
| | | o PHYS 418 - Advanced Lab II | | | | PHYS 418 - Advanced Lab II | |
| | | Credits: 1 | | | | Credits: 1 | |
| | | o PHYS 433 - Nuclear and | | | | PHYS 433 - Nuclear and | |
| | | Elementary Particle Physics | | | | Elementary Particle Physics | |
| | | (COM) Credits: 3 | | | | (COM) Credits: 3 | |
| | | • PHYS 439 - Condensed Matter | | | | • PHYS 439 - Condensed Matter | |
| | | | | | | | |
| | | Physics (COM) Credits: 3-4 (4 | | | | Physics (COM) Credits: 3-4 (4 | |
| | | credits required) | | | | credits required) | |
| | | PHYS 471 - Quantum Mechanics | • | | | PHYS 471 - Quantum Mechanics | |
| | | (COM) Credits: 4 | | | | (COM) Credits: 4 | |
| | | o PHYS 481 - Mathematical | | | | PHYS 481 - Mathematical | |
| | | Physics (COM) Credits: 4 | | | | Physics (COM) Credits: 4 | |
| | | o PHYS 494 - Internship (COM) | | | | o PHYS 494 - Internship (COM) | |
| | | Credits: 1-4 | | | | Credits: 1-4 | |
| | | | | | | | |
| | | o PHYS 498 - Undergraduate | | | | o PHYS 498 - Undergraduate | |
| | | Research/Scholarship (COM) | | | | Research/Scholarship (COM) | |
| | | Credits: 1-12 | | | | Credits: 1-12 | |
| | | STAT 381 - Introduction to | | | | STAT 381 - Introduction to | |
| | | Probability and Statistics (COM) | | | | Probability and Statistics (COM) | |
| | | Credits: 3 | | | | Credits: 3 | |
| Group 2 | · Health/Me | edical Physics | | Group 2 | Health/Me | edical Physics | |
| CHEM | 326 | Organic Chemistry I | 3 | CHEM | 326 | Organic Chemistry I | 3 |
| | | | | | | | 1 |
| CHEM | 326L | Organic Chemistry I Lab | 1 | CHEM | 326L | Organic Chemistry I Lab | |
| CHEM | 328-328L | Organic Chemistry II & Lab (3,1) | 4 | CHEM | 328-328L | Organic Chemistry II & Lab (3,1) | 4 |
| OR | | | | OR | | | |
| CHEM | 332-332L | Analytical Chemistry & Lab (3,1) | | CHEM | 332-332L | Analytical Chemistry & Lab (3,1) | |
| OR | | | | OR | | | |
| PHYS | 471 | Quantum Mechanics (4) | | PHYS | 471 | Quantum Mechanics (4) | |
| NE | 337 | Foundations of Health Physics | 3 | NE | 337 | Foundations of Health Physics | 3 |
| PHYS | 433 | Nuclear & Elementary Particle | 3 | PHYS | 433 | Nuclear & Elementary Particle Physics | 3 |
| | 433 | | 3 | | 433 | | 3 |
| OR | 425 | Physics (3) | | OR | 125 | (3) | |
| NE | 435 | Intro to Nuclear Engineering (3) | | NE | 435 | Intro to Nuclear Engineering (3) | |
| PHYS | 418 | Advanced Laboratory II | 1 | PHYS | 418 | Advanced Laboratory II | 1 |
| STAT | 381 | Introduction to Probability and | 3 | STAT | 381 | Introduction to Probability and | 3 |
| | | Statistics | | | | Statistics | |
| | | | | | | | |
| Group 3. | Flexible E | mphasis | | Group 3: | Flexible E | mphasis | |
| o roup o | | Directed Electives | 20 | o o o o o o | 1 | Directed Electives | 20 |
| | | Electives | 9 | | | Electives | 9 |
| | | | | | | | 9 |
| | | Technical Electives | 7 | | | Technical Electives | |
| | | • Up to a total of 3 credits may be | | | | O Up to a total of 3 credits may be | |
| | | NE/PHYS x94, x96, x98 total | | | | NE/PHYS x94, x96, x98 total | |
| | | • Technical electives will be selected | | | | Technical electives will be | |
| | | from the following list of approved | | | | selected from the following list | |
| | | courses. Any departures from this | | | | of approved courses. Any | |
| | | | | | | departures from this list must be | |
| | | list must be approved by the Head | | | 1 | | |
| | | of the Physics Department. One | | | 1 | approved by the Head of the | |
| | | may not count a specific course | | | | Physics Department. One may | |
| | | required for an elective group as | | | | not count a specific course | |
| | | also counting towards elective credit | | | | required for an elective group as | |
| | | requirements of the elective group. | | | | also counting towards elective | |
| | | o CHEM 332 - Analytical | | | 1 | credit requirements of the | |
| | | | | | | elective group. | |
| | | Chemistry (COM) Credits: 3 | | | | | |
| | | o CHEM 332L - Analytical | | | | OCHEM 332 - Analytical | |
| | | Chemistry Lab (COM) Credits: 1 | | | | Chemistry (COM) Credits: 3 | |
| | | ○ EE 218 - Linear Circuits II | | | | o CHEM 332L - Analytical | |
| | | Credits: 3 | | | | Chemistry Lab (COM) Credits: | |
| | | | | | | 1 | |
| | | | | _ | | | |

| | | Existing Curriculum | Fropos | sea Cu | rrıculum (<mark>hıghlıght changes</mark>) |
|-------|------|---------------------------------------|--------|--------|---|
| Pref. | Num. | Title Cr. Hrs. Pref. | Num. | Title | Cr. Hrs. |
| | | o EE 218L - Linear Circuits II Lab | | 0 | EE 218 - Linear Circuits II |
| | | Credits: 1 | | | Credits: 3 |
| | | | | | |
| | | o EE 222 - Energy Conversion | | 0 | EE 218L - Linear Circuits II Lab |
| | | Credits: 3 | | | Credits: 1 |
| | | o EE 222L - Energy Conversion Lab | | 0 | EE 222 - Energy Conversion |
| | | Credits: 1 | | | Credits: 3 |
| | | | | | |
| | | o EE 320 - Electronics I (COM) | | 0 | EE 222L - Energy Conversion |
| | | Credits: 3 | | | Lab Credits: 1 |
| | | o EE 320L - Electronics I Lab | | 0 | EE 320 - Electronics I (COM) |
| | | (COM) Credits: 1 | | | Credits: 3 |
| | | EM 321 - Mechanics of Materials | | 0 | EE 320L - Electronics I Lab |
| | | | | 0 | |
| | | (COM) Credits: 3 | | | (COM) Credits: 1 |
| | | ○ EM 331 - Fluid Mechanics (COM) | | 0 | EM 321 - Mechanics of |
| | | Credits: 3 | | | Materials (COM) Credits: 3 |
| | | o GE 121 - Engineering Design | | 0 | EM 331 - Fluid Mechanics |
| | | Graphics I Credits: 1 | | | (COM) Credits: 3 |
| | | | | | |
| | | ○ GE 123 - Computer Aided | | 0 | GE 121 - Engineering Design |
| | | Drawing Credits: 1 | | | Graphics I Credits: 1 |
| | | o MATH 315 - Linear Algebra | 1 | 0 | GE 123 - Computer Aided |
| | | (COM) Credits: 3 | 1 | | Drawing Credits: 1 |
| | | · · · · · · · · · · · · · · · · · · · | | | MATH 315 Linear Algebra |
| | | o MATH 331 - Advanced | | 0 | 8.1. |
| | | Engineering Mathematics (COM) | | | (COM) Credits: 3 |
| | | Credits: 3 | | 0 | MATH 331 - Advanced |
| | | o MATH 374 - Scientific | | | Engineering Mathematics |
| | | Computation I Credits: 3 | | | (COM) Credits: 3 |
| | | - | | | |
| | | o ME 415 - Heat Transfer Credits: 3 | | 0 | MATH 374 - Scientific |
| | | o NE/PHYS 437 - Foundations of | | | Computation I Credits: 3 |
| | | Health Physics Credits: 3 | | 0 | MATH 412 – Linear Algebra |
| | | ○ NE 435 - Introduction to Nuclear | | | (COM) Credits: 3 |
| | | Engineering Credits: 3 | | 0 | ME 415 - Heat Transfer Credits: |
| | | | | 0 | |
| | | o NE 494 - Internship (COM) | | | 3 |
| | | Credits: 1-3 | | 0 | NE/PHYS 437 - Foundations of |
| | | ○ NE 498 - Undergraduate | | | Health Physics Credits: 3 |
| | | Research/Scholarship (COM) | | 0 | NE 435 - Introduction to |
| | | Credits: 1-3 | | | Nuclear Engineering Credits: 3 |
| | | | | | |
| | | o PHIL 200 - Introduction to Logic | | 0 | NE 494 - Internship (COM) |
| | | (COM) [SGR #4] Credits: 3 | | | Credits: 1-3 |
| | | o PHYS 185 - Solar System | | 0 | NE 498 - Undergraduate |
| | | Astronomy (COM) [SGR #6] | 1 | | Research/Scholarship (COM) |
| | | Credits: 3 | 1 | | Credits: 1-3 |
| | | o PHYS 185L - Solar System | 1 | | PHIL 200 - Introduction to |
| | | | 1 | 0 | |
| | | Astronomy Lab (COM) [SGR #6] | 1 | | Logic (COM) [SGR #4] Credits: |
| | | Credits: 0 | 1 | | 3 |
| | | o PHYS 187 - Stars, Galaxies, and | 1 | 0 | PHYS 185 - Solar System |
| | | Cosmology (COM) [SGR #6] | 1 | | Astronomy (COM) [SGR #6] |
| | | Credits: 3 | 1 | | Credits: 2 |
| | | | 1 | | |
| | | o PHYS 187L - Stars, Galaxies, and | | 0 | PHYS 185L - Solar System |
| | | Cosmology Lab (COM) [SGR #6] | | | Astronomy Lab (COM) [SGR |
| | | Credits: 0 | | | #6] Credits: 1 |
| | | o PHYS 361 - Optics (COM) | | 0 | PHYS 187 - Stars, Galaxies, and |
| | | Credits: 3 | | | Cosmology (COM) [SGR #6] |
| | | | 1 | | |
| | | o PHYS 418 - Advanced Lab II | 1 | | Credits: 2 |
| | | Credits: 1 | 1 | 0 | PHYS 187L - Stars, Galaxies, |
| | | o PHYS 433 - Nuclear and | 1 | | and Cosmology Lab (COM) |
| | | Elementary Particle Physics | 1 | | [SGR #6] Credits: 1 |
| | | (COM) Credits: 3 | 1 | _ | PHYS 361 - Optics (COM) |
| | | · · · · · · · · · · · · · · · · · · · | 1 | 0 | |
| | | o PHYS 439 - Condensed Matter | 1 | | Credits: 3 |
| | | Physics (COM) Credits: 3-4 (4 | 1 | 0 | PHYS 418 - Advanced Lab II |
| | | credits required) | 1 | | Credits: 1 |
| | • | | | • | L |

| Pref. | Num. | Title | Cr. Hrs. | Pref. | Num. | Title | memm (memmem enunges) | Cr. Hrs. |
|---|-------------|--|---|---|------------|---------------------------------------|--|-----------|
| Elective | | PHYS 471 - Quantum Mechanics (COM) Credits: 4 PHYS 481 - Mathematical Physics (COM) Credits: 4 PHYS 494 - Internship (COM) Credits: 1-4 PHYS 498 - Undergraduate Research/Scholarship (COM) Credits: 1-12 STAT 381 - Introduction to Probability and Statistics (COM) Credits: 3 | | Electives | | o o o o o o o o o o o o o o o o o o o | PHYS 433 - Nuclear and Elementary Particle Physics (COM) Credits: 3 PHYS 439 - Condensed Matter Physics (COM) Credits: 3-4 (4 credits required) PHYS 471 - Quantum Mechanics (COM) Credits: 4 PHYS 481 - Mathematical Physics (COM) Credits: 4 PHYS 494 - Internship (COM) Credits: 1-4 PHYS 498 - Undergraduate Research/Scholarship (COM) Credits: 1-12 STAT 381 - Introduction to Probability and Statistics (COM) Credits: 3 | |
| | 1 | , | ry of Cre | edits Phys | <u> </u> | - / | | |
| System | General Ed | ucation Requirements | 33 | | | lucatio | on Requirements | 25 |
| | nent Requi | - | 3 | | nent Requi | | | 0 |
| _ | _ | credits of coursework beyond SGRs, | | ************************************** | | | s of coursework beyond SGRs, | |
| Major, and Support Courses | | | | Major, and Support Courses | | | | |
| Majors Requirements | | 84 | Majors 1 | Majors Requirements | | | | |
| Electives (Taken as needed to complete any additional | | 0 | Electives (Taken as needed to complete any additional | | | | | |
| degree r | equirements | s) | | degree requirements) | | | | |
| | To | otal number of hours required for major | 108 | Total number of hours required for major | | | | 98 |
| | To | tal number of hours required for degree | 120 | Total number of hours required for degree | | | | 120 |

Proposed Curriculum (highlight changes)

8. Explanation of the Change:

Existing Curriculum

The Department of Physics identified the following changes to the Physics major:

- Removed a specific course selection from SGR #1 and SGR #2 to allow students more flexibility in meeting their System General Education requirements.
- Departments updated zero credit lab courses and adjusted the credits between the lecture and labs to accurately reflect contact time.
- PHYS 211-211L University Physics I & Lab and PHYS 213-213L University Physics I & Lab increased from 4+0 to 4+1 credit courses.
- AHSS 111 Introduction to Global Citizenship and Diversity (3 cr.) and the minor requirement were eliminated to allow students to more clearly focus on the major requirements.
- Removed the department requirement to complete 10+ credits of Natural Science coursework. This language is redundant to current program requirements. The requirement was carried over when the department transitioned from the College of Arts and Sciences to the College of Natural Sciences.