

# Central Community College (C C C) and University of Nebraska - Kearney (U N K)

## Physics

### Bachelor of Science

Catalog: 2019-2020 Date Revised: 10/16/19

### Guided Pathway

| C C C Course Number   | C C C Course Title                        | C C C Required Credits | U N K Course Number | U N K Course Title                              | U N K Required Credits |
|---|---|------------------------|---------------------|---|------------------------|
| <b>General Studies</b>  |   |                        |                     |   |                        |
| <i>Foundational Core - Written Communication - Must take ENGL 1020</i>  |   |                        |                     |   |                        |
| ENGL 1010   | English Composition I                     | 3                      | ENG 101             | Introduction to Academic Writing                | 3                      |
| ENGL 1020   | English Composition 2                     | 3                      | ENG 102             | Academic Writing and Research                   | 3                      |
| <i>Foundational Core - Math - Must take MATH 1600</i>   |   |                        |                     |   |                        |
| MATH 1150   | College Algebra                           | 3                      | MATH 102            | College Algebra                                 | 3                      |
| MATH 1380   | Trigonometry                              | 3                      | MATH 103            | Plane Trigonometry                              | 3                      |
| MATH 1600   | Analytic Geometry and Calculus I          | 5                      | MATH 115            | Calculus I with Analytic Geometry               | 5                      |
| MATH 2000   | Mathematics for Elementary Teachers       | 3                      | MATH 230            | Math for Elementary Teachers I                  | 3                      |
| MATH 2040   | Applied Calculus                          | 3                      | MATH 123            | Applied Calculus I                              | 3                      |
| MATH 2170   | Applied Statistics                        | 3                      | STAT 241            | Elementary Statistics                           | 3                      |
| <i>Foundational Core - Oral Communication - 3 credits required</i>  |   |                        |                     |   |                        |
| SPCH 1110   | Public Speaking                           | 3                      | SPCH 100            | Fundamentals of Speech Communication            | 3                      |
| SPCH 1400   | Oral Communication                        | 3                      | SPCH 100            | Fundamentals of Speech Communication            | 3                      |
| <i>Foundational Core - Democracy in Perspective - 3 credits required</i>  |   |                        |                     |   |                        |
| EDUC 1110   | Introduction to Education                 | 3                      | TE 100              | Teaching in a Democratic Society                | 3                      |
| HUSR 1100   | Introduction to Human and Social Services | 3                      | SOWK 170            | Introduction to Social Welfare                  | 3                      |
| MART 1010   | Mass Media                                | 3                      | JMC 100             | Global Media Literacy                           | 3                      |
| <i>Portal Course - 3 credit hours required for General Studies credit. Students may take any course numbered 188 in any department to satisfy the portal requirement. Students are strongly encouraged to complete the Portal course requirement during their first or second semester at UNK. Students transferring in 24 or more hours of General Studies credit are exempt from taking the Portal.</i> |   |                        |                     |   |                        |
| <i>Distribution - Aesthetics - 3 credits required</i>   |   |                        |                     |   |                        |
| ARTS 1010   | Introduction to the Visual Arts           | 3                      | ART 120             | Art Appreciation                                | 3                      |
| ARTS 1250   | Art Fundamentals                          | 3                      | ART 100             | Art Structure                                   | 3                      |
| MUSC 1010   | Introduction to Music                     | 3                      | MUS 100             | Music Appreciation                              | 3                      |
| MUSC 2730   | History of Rock Music                     | 3                      | MUS 107             | Introduction to Rock and Blues                  | 3                      |
| THEA 1010   | Introduction to Theatre                   | 3                      | THEA 120            | Introduction to Theatre                         | 3                      |
| <i>Distribution - Humanities - 6 credits required in two disciplines</i>  |   |                        |                     |   |                        |
| ENGL 2100   | Introduction to Literature                | 3                      | ENG 254             | Introduction to Literature: Special Topics      | 3                      |
| ENGL 2340   | American Literature                       | 3                      | ENGL 251            | Introduction to Literature: American Literature | 3                      |
| ENGL 2370   | Non-Western Literature                    | 3                      | ENG 253             | Intro to Literature: Non-Western Civilization   | 3                      |
| HIST 1000   | Western Civilization to 1700              | 3                      | HIST 210            | Western Civilization                            | 3                      |
| HIST 1010   | Western Civilization after 1700           | 3                      | HIST 211            | Western Civilization                            | 3                      |
| HIST 1700   | World Civilization to 1500                | 3                      | HIST 212            | Non-Western World History                       | 3                      |
| HIST 1710   | World Civilization after 1500             | 3                      | HIST 212            | Non-Western World History                       | 3                      |
| HIST 2010   | American History I                        | 3                      | HIST 250            | American History                                | 3                      |
| HIST 2020   | American History 2                        | 3                      | HIST 251            | American History                                | 3                      |
| HIST 2150   | Introduction to Latin American            | 3                      | HIST 215            | Introduction to Latin America                   | 3                      |
| PHIL 1010   | Introduction to Philosophy                | 3                      | PHIL 100            | Introduction to Philosophy                      | 3                      |
| SPAN 2010   | Intermediate Spanish I                    | 3                      | SPAN 200            | Intermediate Spanish I                          | 3                      |
| SPAN 2020   | Intermediate Spanish 2                    | 3                      | SPAN 201            | Intermediate Spanish 2                          | 3                      |
| <i>Distribution - Social Sciences - 6 credits required in two disciplines</i>   |   |                        |                     |   |                        |
| ANTH 1100   | Introduction to Anthropology              | 3                      | SOC 250             | Anthropology                                    | 3                      |
| CRIM 1010   | Introduction to Criminal Justice          | 3                      | CJUS 101            | Introductions to Criminal Justice               | 3                      |
| ECON 1100   | Economics Understanding                   | 3                      | ECON 100            | Contemporary Economic Issues                    | 3                      |

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|--|--|------------------------|---------------------|--|------------------------|
| ECON 2110  | Principles of Macroeconomics                   | 3                      | ECON 270            | Principles of Economics, Macroeconomics      | 3                      |
| ECON 2120  | Principles of Microeconomics                   | 3                      | ECON 271            | Principles of Economics, Microeconomics      | 3                      |
| GEOG 1400  | Cultural Geography                             | 3                      | GEOG 106            | Human Geography                              | 3                      |
| POLS 1000  | American Government                            | 3                      | PSCI 110            | Introduction to American Politics            | 3                      |
| POLS 1600  | International Relations                        | 3                      | PSCI 168            | Introduction to International Relations      | 3                      |
| PSYC 1010  | Psychology of the Family                       | 3                      | FAMS 351            | Marriage and Family Relationships            | 3                      |
| PSYC 1810  | Introduction to Psychology                     | 3                      | PSY 203             | General Psychology                           | 3                      |
| PSYC 2890  | Developmental Psychology                       | 3                      | PSY 230             | Human Development                            | 3                      |
| SOCI 1010  | Introduction to Sociology                      | 3                      | SOC 100             | Introduction to Sociology                    | 3                      |
| SOCI 2150  | Issues of Unity and Diversity                  | 3                      | ETHS 124            | Introduction to Ethnic Studies               | 3                      |
| SOCI 2160  | Marriage and Family                            | 3                      | FAMS 351            | Marriage and Family Relationships            | 3                      |
| <i>Distribution - Natural Sciences - Must take PHYS 2110 and a 3 credit course in a different discipline</i> |  |                        |                     |  |                        |
| BIOS 1010  | General Biology                                | 4                      | BIOL 103            | General Biology                              | 4                      |
| BIOS 1060 + 1070   | Environmental Science and Lab                  | 3 + 1                  | PHYS 201            | Earth Science                                | 4                      |
| BIOS 1090  | General Botany                                 | 4                      | BIOL 105            | Biology 1                                    | 4                      |
| BIOS 1120  | Principles Of Zoology                          | 4                      | BIOL 106            | Biology 2                                    | 4                      |
| BIOS 2460  | Microbiology                                   | 4                      | BIOL 211            | Human Microbiology                           | 4                      |
| CHEM 1050  | Elements Of Chemistry                          | 4                      | CHEM 145            | Introductory Chemistry                       | 4                      |
| CHEM 1090  | General Chemistry 1                            | 4                      | CHEM 160 + 160L     | General Chemistry and Lab                    | 3 + 1                  |
| CHEM 1100  | General Chemistry 2                            | 4                      | CHEM 161 + 161L     | General Chemistry and Lab                    | 3 + 1                  |
| PHYS 1010  | Earth Science                                  | 3                      | PHYS 201            | Earth Science                                | 4                      |
| PHYS 1100  | Physical Science                               | 4                      | PHYS 100 + 100L     | Physical Science and Lab                     | 3 + 1                  |
| PHYS 1410  | General Physics 1                              | 5                      | PHYS 205 + 205L     | General Physics 1 and Lab                    | 4 + 1                  |
| PHYS 1420  | General Physics 2                              | 5                      | PHYS 206 + 206L     | General Physics 2 and Lab                    | 4 + 1                  |
| PHYS 1500  | Introduction to Physical Geography with Lab    | 4                      | GEOG 102            | Physical Geography 2: The Lithosphere        | 4                      |
| PHYS 2010  | Meteorology: Intro to Atmosphere               | 4                      | GEOG 209            | Meteorology                                  | 3                      |
| PHYS 2110  | General Physics 1 w/Calculus                   | 5                      | PHYS 275 and 275L   | General Physics 1 and Lab                    | 4 + 1                  |
| PHYS 2120  | General Physics 2 w/Calculus                   | 5                      | PHYS 276 and 276L   | General Physics 2 and Lab                    | 4 + 1                  |
| <i>Distribution - Analytical and Quantitative Thought - 0 credits required</i>                               |  |                        |                     |  |                        |
| BSAD 2170  | Applied Statistics                             | 3                      | MGT 233             | Business Statistics                          | 3                      |
| BTEC 1110  | Computer and Internet Literacy                 | 3                      | CSIT 108            | Computer in Society                          | 3                      |
| INFO 1100  | Introduction to Information Technology and Sys | 3                      | ITEC 150            | Internetworking Literacy                     | 3                      |
| INFO 1120  | Microcomputer Applications                     | 3                      | CYBR 182            | Software Productivity Tools                  | 3                      |
| INFO 1380  | Technology in Society                          | 3                      | CSIT 108            | Computers in Society                         | 3                      |
| INFO 1670  | IT Essentials                                  | 3                      | ITEC 150            | Internetworking Literacy                     | 3                      |
| INFO 1700  | Database Design Fundamentals                   | 3                      | CSIT 100.3          | Computer Enviroments:Database                | 1                      |
| INFO 1800  | Visual Basic Programming                       | 3                      | CSIT 111            | Applied Computer Programming                 | 3                      |
| INFO 2820  | JAVA Programming                               | 3                      | CYBR 103            | Computer Science 1: Java for Software Develo | 4                      |
| INFO 2830  | C# Programming                                 | 3                      | CYBR 101            | Computer Science 1: Python for Analytics     | 3                      |
| MATH 2170  | Applied Statistics                             | 3                      | STAT 241            | Elementary Statistics                        | 3                      |
| MUSC 1470  | Music Theory I                                 | 3                      | MUS 200             | Music Theory I                               | 3                      |
| <i>Distribution - Wellness - 0 credits required</i>  |  |                        |                     |  |                        |
| BSAD 1010  | Consumer Problems                              | 3                      | FAMS 160            | Personal Money Management                    | 3                      |
| NUTR 1470  | Nutrition                                      | 3                      | FAMS 110            | Introduction to Nutrition                    | 3                      |
| PHED 1050  | Physical Education - Walking and Jogging       | 1                      | PE 110              | Basic Sports Activities                      | 1                      |
| PHED 1400  | Personal Health                                | 3                      | PE 150              | Healthy Wealthy and Wise                     | 3                      |
| PSYC 2860  | Abnormal Psychology                            | 3                      | PSY 231             | Abnormal Behavior and Society                | 3                      |
| <i>1 credit required to reach 27 credit hour minimum in Distribution</i>                                     |  |                        |                     |  |                        |
| <i>BS Science - related course requirements - 8 credits required</i>   |  |                        |                     |  |                        |
| MATH 2070  | Analytic Geometry and Calculus 2               | 5                      | MATH 202            | Calculus 2 with Analytic Geometry            | 5                      |
| MATH 2210  | Differential Equations                         | 3                      | MATH 305            | Differential Equations                       | 3                      |

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|---|----------------------------------|------------------------|---------------------|---------------------------|------------------------|
| <i>5 credits required for unrestricted electives</i>  |                                  |                        |                     |                           |                        |
| <i>Physics Requirements</i>   |                                  |                        |                     |                           |                        |
| PHYS 2120   | General Physics 2 w/Calculus     | 5                      | PHYS 276 and 276L   | General Physics 2 and Lab | 4 + 1                  |
| <i>Physics Math Requirements</i>  |                                  |                        |                     |                           |                        |
| MATH 2080   | Analytic Geometry and Calculus 3 | 5                      | MATH 260            | Calculus 3                | 5                      |
| Guided Pathways are suggested course selections but students should consult with their academic advisor and transfer institution for the most current program information. Course Equivalencies can be located at <a href="https://transfer.nebraska.edu/">https://transfer.nebraska.edu/</a> . |                                  |                        |                     |                           |                        |