**Academic Program Curriculum**

**University of Minnesota Crookston**

**Bachelor of Science  
Updated: August 2023**

**AGRICULTURAL EDUCATION**

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| --- | --- | --- |
| **REQUIREMENTS: Agricultural Science**  Liberal Education 40  Major/electives 80  **TOTAL 120** | **REQUIREMENTS: Natural and Managed Environmental Science**  Liberal Education 40  Major/electives 80  **TOTAL 120** | **REQUIREMENTS: Agricultural Systems Engineering Technology**  Liberal Education 40  Major/electives 80  **TOTAL 120** |

## LIBERAL EDUCATION DISTRIBUTION REQUIREMENTS (minimum of 40 credits)

## Written and Oral Communication (*minimum of 9 credits) Required course in this area:*

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| --- | --- | --- | --- | --- | --- |
|  | COMP | 1011 | Composition I | 3 | F,S |
|  | COMP | 1013 | Composition II | 3 | F,S |
|  | SPCH | 1101 | Public Speaking | 3 | F,S |

##### **Biological and Physical Sciences** *(min. of 3 credits from biological sciences with lab and min. of 3 credits from physical sciences with lab)*

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| --- | --- | --- | --- | --- | --- |
|  | BIOL | 1009 | General Biology | 4 | F,S |
|  | PHYS | 1012 | Introductory Physics (AAET emphasis) | 4 | F,S |
|  | CHEM | 1001 | Introductory Chemistry (AS & NMEE emphasis) | 4 | F,S |

##### **Mathematical Thinking** *(min. of 3 credits)*

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| --- | --- | --- | --- | --- | --- |
|  | MATH | 1031 | College Algebra | 3 | F,S |

History and the Behavioral and Social Sciences *(min. of 6 credits; ED requires the following)*

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|  | ECON | 2102 | Microeconomics | 3 | F,S |
|  | ED | 2100 | Child and Adolescent Development and Learning | 3 | F,S |

The Humanities—the Arts, Literature, and Philosophy *(min. of 6 credits)*

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Human Diversity (*min. of 3 credits; may also count in one other goal area*)

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Global Perspective (*min. of 3 credit; may also count in one other goal area*)

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Ethical and Civic Responsibility (*min. of 3 credits; may also count in one other goal area)*

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People and the Environment *(min. of 3 credits; may also count in one other goal area)*

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###### **Liberal Education Electives**

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**PROGRAM REQUIREMENTS**

**EDUCATION CORE** (28)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | ED | 2200 | Foundations of Education | 3 | F |
|  | ED | 2400 | Introduction to Middle School and High School Education and Experiential Learning | 3 | S |
|  | ED | 3001 | Perspectives of Substance Use for Educators | 1 | F,S |
|  | ED | 3033 | Foundations of Teaching Work-Based Learning | 2 | S |
|  | ED | 3034 | Methods of Teaching Work-Based Learning | 3 | F |
|  | ED | 3009 | Human Relations in Diversity | 2 | S |
|  | ED | 3110 | Educational Psychology | 3 | S |
|  | ED | 3210 | Reading in the Content Area | 2 | F |
|  | ED | 3500 | Introduction to Children with Special Needs | 2 | S |
|  | ED | 3600 | Classroom Management in Middle School and High School Settings | 3 | F |
|  | ED | 4400 | Teaching 5-12 Students in Inclusive Environments | 2 | F |
|  | ED | 4600 | Student Teaching: Work-Based Learning | 1 | S |
|  | ED | 4800 | Senior Professional Seminar | 1 | S |

**AGRICULTURE/NATURAL RESOURCES CORE** (24)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | SOIL | 1293 | Soil Science | 3 | F |
|  | ASM | 1034 | Facility, Maintenance, and Safety | 4 | F,S |
|  | AGEC | 1005 | World Agricultural Food Systems | 3 | S |
|  | AGEC | 2310 | Agribusiness Financial Records (technology credit) | 3 | F,S,SS |
|  | ANSC | 1004 | Introduction to Animal Science | 4 | F,S |
|  | NATR | 3374 | Ecology | 4 | F |
|  | GNAG | 3XXX | International Agricultural Education Experience (GnAg 3203 or 3204) | 3 | S,M,SS |

**ARICULTURAL EDUCATION** (18)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | AGED | 2001 | Career Exploration and Early Experience in Agricultural Education (May be repeated to 3 credits) | 1 | F,S |
|  | AGED | 3003 | SAE, FFA & Leadership | 3 | S |
|  | AGED | 3004 | Methods of Teaching Agricultural Education | 4 | F |
|  | AGED | 4700 | Teaching Internship – Farm Business Management | 1 | S |
|  | AGED | 4800 | Teaching Internship – Middle School | 1 | S |
|  | AGED | 4900 | Teaching Internship– High School | 8 | S |

**WORK-BASED LEARNING** (6)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | ED | 3033 | Foundations of Teaching Work-Based Learning | 2 | S |
|  | ED | 3034 | Methods of Teaching Work-Based Learning | 3 | F |
|  | ED | 4600 | Student Teaching: Work-Based Learning | 1 | S |

**AGRICULTURAL SCIENCE EMPHASIS** (10)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | HORT | 1010 | Introduction to Horticulture | 3 | F,S |
|  | AGRO | 1183 | Field Crops: Production Principles | 3 | F,S |
|  | EQSC or ANSC | XXXX | Animal Production (select from the following: EqSc 2102; AnSc 1205, 1206, 3303, 3204) | 4 | F,S |

**NATURAL AND MANAGED ENVIRONMENTAL EDUCATION EMPHASIS** (10)

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| --- | --- | --- | --- | --- | --- |
|  | HORT | 1010 | Introduction to Horticulture | 3 | F,S |
|  | NATR | 1233 | Introduction to Natural Resources | 3 | F |
|  | NATR | 1244 | Elements of Forestry | 4 | S |

**AGRICULTURAL SYSTEMS ENGINEERING TECHNOLOGY EMPHASIS** (10)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | ASM  ASM  ASM | 2043 or  2053 or  3002 | Welding and Manufacturing Processes  Electricity, Controls, and Sensors in Agriculture  Agricultural Mobile Power Systems | 3  3  3 | S  S  F |
|  | ASM | 3360 | Applications in Precision Agriculture | 3 | S |
|  | ASM | 3365 | Applications in Precision Agriculture Lab | 1 | F |