

**MoSTEP 1.2.1.1: Agricultural Education (9-12) Competencies**  
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The beginning (preservice) **Agricultural Education** teacher will demonstrate knowledge of and/or competency in the following areas of study:

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| <p><b>1. Agriculture and Society</b><br/>           (1997 SSC: 6.1; <i>Praxis</i> 0700: I)</p>  | <p>1. (1997 SSC: 6.1; 0700: I.1) The economic importance and impact of food and fiber production and managing natural resources (e.g., agriculture and America’s economic relationship to the international market, the agricultural interests and output of states and regions, the impact of agriculture on a country’s trade balance).</p>   |
|   | <p>2. (0700: I.2, I.5) The effects and impacts of political decisions on agriculture, food, fiber, and natural resources (e.g., embargoes, the differentiation between “farm-interest” and broader interpretations of agriculture, taxes, land use, subsidies, monitoring of agricultural practices, environmental policies, animal welfare).</p>   |
|   | <p>3. (0700: I.3) The sociological status of agriculture, food, and fiber, and natural resources (e.g., agriculture’s current and former image, effects of good and bad times on local agricultural communities, the farmers’ coalition movement, historical patterns related to the family farm, contemporary issues related to corporate farms and their relationship to and within communities).</p> |
|   | <p>4. (0700: I.6) Trends in the production of food and fiber and the management of natural resources (e.g., shifts from independent operation to cooperation, nontraditional crops, biotechnology, computerization, remote sensing).</p>  |
| <p><b>2. Agricultural Business, Economics, and Management</b><br/>           (1997 SSC: 1.1, 1.2; <i>Praxis</i> 0700: V; <i>ShowMe</i>: G 1.6, 3.1-8, 4.1, 4.4; MA 1, 3, 4, 5; SS 4; CR 2.a.3-4, 2.b.3.a)</p> | <p>1. (1997 SSC: 1.1; 0700: V.1) Principles of economics (e.g., supply and demand; surpluses; margins; opportunity costs; market reports, cycle analysis).</p>  |
|   | <p>2. (0700: V.2) Management issues and records (e.g., computers, taxes, income and expense, profit and loss, asset and liability, cash flow, appreciation and depreciation, investments, credit, enterprise analysis, subsidies, personnel management).</p>  |
|   | <p>3. (1997 SSC: 1.2; 0700: V.3) Principles of marketing (e.g., futures and options, standards and quality control, inspection, transportation, advertising and sales, appraisals, marketing orders, contract marketing).</p>   |
|   | <p>4. (1997 SSC: 1.3; 0700: V.4) Legal issues in agriculture, food, fiber, and natural resources (e.g., ownership modes; vertical and horizontal integration; contracts and leases; water rights; estate planning).</p>   |
| <p><b>3. Animal Science</b><br/>           (1997 SSC: 2.1-.6; <i>Praxis</i> 0700: III; <i>ShowMe</i>: G 1.3, 3.1-8, 4.1-7; SC 3, 4, 8; CR 2.a.1)</p>  | <p>1. (0700: III.1) Traditional and emerging animal industries (e.g., dairy and beef cattle, swine, poultry, sheep, horns, beekeeping, aquaculture).</p>  |
|   | <p>2. (1997 SSC: 2.3; 0700: III.2) Animal anatomy and physiology, including but not limited to monogastric and ruminant digestive systems.</p>  |
|   | <p>3. (1997 SSC: 2.1; 0700: III.2) Animal reproduction and genetic principles.</p>  |

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|   | <p>4. (1997 SSC: 2.2, 2.4; 0700: III.3) Animal management practices (e.g., balancing livestock rations to meet nutritional requirements; feed additives; housing and environmental conditions; diseases and parasites, including interpretation of medicine and pesticide labels; production economics, including hormonal factors, animal health practices, selection).</p> <p>5. (0700: III.4) Animal products and processing-</p> <p>6. (1997 SSC: 2.5) Economic importance of animal agriculture in Missouri, the United States, and the world.</p> <p>7. (1997 SSC: 2.6) Issues and policies related to animal agriculture and consumer concerns.</p>  |
| <p><b>4. Plants and Soil Science</b><br/> (1997 SSC: 3.1-5; <i>Praxis</i> 0700: II; <i>ShowMe</i>: G 1.3, 3.1-8, 4.1-7; SC 3, 4, 8; CR 2.a.2, 2.a.6)</p>          | <p>1. (1997 SSC: 3.1, 3.4; 0700: II.1) Plant growth and development (e.g., plant taxonomy; plant parts and their functions; sexual and asexual reproduction; factors affecting growth; plant pathology including diseases, insect control, integrated pest management, interpretation of pesticide labels).</p> <p>2. (1997 SSC: 3.2; 0700: II.2) Soil and land management (e.g., soil texture, soil profile, topography, depth, structure, soil fertility, drainage and irrigation, land features restricting tillage).</p> <p>3. (1997 SSC: 3.3) Economic importance of plants in Missouri, the United States, and the world.</p> <p>4. (1997 SSC: 3.5) Issues and policies related to plant/crop production, production, and marketing.</p> <p>5. (0700: II.3) Traditional and specialized crop production.</p> <p>6. (0700: II.4) Principles of horticulture (e.g., nursery, greenhouse, floriculture, landscape design, turf management, potting mixes and materials, chemicals specific to horticulture).</p> |
| <p><b>5. Natural Resources and the Environment</b><br/> (19967 SSC: 4.1; <i>Praxis</i> 0700: VI; <i>ShowMe</i>: G 1.3, 3.1-8, 4.1-7; SC 5, 8; SS 5; CR 2.a.8)</p> | <p>1. (1997 SSC: 4.1) Stewardship and management of natural resources.</p> <p>2. (0700: VI: 1) Principles of ecology (e.g., water cycle, food cycle, relationship between chemicals and the natural cycle of animals).</p> <p>3. (0700: VI: 2-5) Relationship of agriculture, food, fiber, and natural resources to the environment (e.g., pesticide certification, effects of agricultural chemicals; forestry and timber crop production; fish and wildlife).</p> <p>4. (0700: VI.6) Outdoor recreation: camping, tourism, hunting leases.</p>  |
| <p><b>6. Agricultural Mechanization and Technology</b><br/> (1997 SSC: 5.1-2; <i>Praxis</i> 0700: IV; <i>ShowMe</i>: G 3.1-8,</p>                                 | <p>1. (1997 SSC: 5.1; 0700: IV: 1) Principles and maintenance of agricultural mechanization and technology (e.g., monitoring devices; implements; equipment for feeding, milking, unloading, and harvesting; engines, including gasoline, diesel, 2-cycle, and 4-cycle; tractors; troubleshooting; hydraulics; calibration of equipment).</p>   |

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| <p>4.1, 4.5, 4.6, 4.7; CR 2.a.5)</p>   | <p>2. (0700: IV: 2) Basic principles of agricultural structures (e.g., surveying for, maintaining, and repairing soil and water structures).</p> <p>3. (1997 SSC: 5.2; 0700: IV: 3) Principles of agricultural construction (e.g., plans and design, electricity, plumbing, water systems, heating and cooling, maintenance and repair, storage structures, concrete).</p> <p>4. (0700: IV: 5) Safety considerations in agricultural mechanization (e.g., personnel, fire, machinery, shop, chemicals).</p> <p>5. (1997 SSC: 5.1; 0700: IV: 4) Farm shop practices: welding, metalworking, woodworking, hand tools, power tools.</p>  |
| <p><b>7. Career Development</b><br/> (1997 SSC: 6.2-.8; 7.2;<br/> <i>Praxis</i> 0700: I.4; <i>ShowMe:</i><br/> G 2.6, 4.8; CR 2.b.3)</p> | <p>1. (1997 SSC: 6.2, 6.7; 0700: I: 4) Career opportunities, including entrepreneurship, and trends in the agriculture, food, fiber, and natural resources industry (e.g., scientific bases, technical management of specialized operations, horticulture, aquaculture, silvaculture).</p> <p>2. (1997 SSC: 6.3, 6.4, 6.8) Career development and counseling theories.</p> <p>3. Collaborating with guidance, counseling, and special education personnel.</p> <p>4. (1997 SSC: 6.5, 6.6) Workplace expectations, professional dispositions, and employability skills.</p> <p>5. (1997 SSC: 6.4) Resume development, job search, applications, interviews, and applicant follow-up.</p> <p>6. (1997 SSC: 7.2) Implementing and managing agriculture, food, fiber, and natural resources internships, cooperative education, and community-based learning opportunities.</p>   |
| <p><b>8. Program Design and Management</b><br/> (1997 SSC: 7.1-.11; <i>Praxis</i><br/> 0700: VII.3; CR 2.b.2-3)</p>                      | <p>1. (1997 SSC: 7.6; 0700: VII: 3) Forming and managing agricultural education advisory committee and using committee input to improve curriculum.</p> <p>2. Developing valid and reliable student and program assessment instruments and using the results to improve curriculum.</p> <p>3. (1997 SSC: 7.1, 7.2, 7.8; 0700: VII: 3) Forming partnerships with community leaders/organizations, government/non-government agencies, and business/industry to plan and improve program delivery.</p> <p>4. (1997 SSC: 7.3) Managing agricultural education laboratory facilities safely and efficiently.</p> <p>5. (1997 SSC: 7.4, 7.5) History, philosophy, and current issues in career and agricultural education. Designing, organizing, and managing vocational programs.</p> <p>6. (1997 SSC: 7.7) Program needs assessment, evaluation and follow-up assessments.</p> <p>7. (1997 SSC: 7.9, 7.10) Regulatory and statutory requirements affecting career and agricultural education.</p> |

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|   | 8. (1997 SSC: 11; 0700: VII: 3) Program budget development and management of internal and external funding.  |
|   | 9. (1997 SSC: 12) Program promotion and marketing.   |
| <b>9. Supervised Agricultural Experience (SAE)</b><br>(1997 SSC: 8.1-.4; <i>Praxis</i> 0700: VII.2; CR 2.b.2-3)                         | 1. (1997 SSC: 8.1; 0700: VII: 2) Philosophy, purpose, types, and supervision of SAE programs (e.g., entrepreneurship, placement, directed-laboratory experience, exploratory).                         |
|   | 2. (1997 SSC: 8.2, 8.3) Opportunities for and planning and implementation of quality SAE programs.   |
|   | 3. (1997 SSC: 8.4; 0700: VII: 2) Financial record keeping.   |
| <b>10. Development and Implementation of the Agriculture Curriculum</b><br>(1997 SSC: 9.1-.7; <i>Praxis</i> 0700: VII; CR: III.A.2.b.7) | 1. (1997 SSC: 9.1) Developing objectives and evaluating student performance in the cognitive, psychomotor, and affective domains.  |
|   | 2. (1997 SSC: 9.4; 0700: VII: 2) Designing, implementing, and evaluating a broad range of instructional strategies (e.g., problems-based learning, experiential learning, application-based learning). |
|   | 3. (1997 SSC: 9.3, 9.5) Integrating academics into the agriculture curriculum.   |
|   | 4. (1997 SSC: 9.6) Adult learning theory and practice.   |
|   | 5. (1997 SSC: 9.7) Instructional management systems.   |
|   | 6. Collaboration among agriculture education and other content faculty.  |
| <b>11. Agricultural Education Student Organizations</b><br>(1997 SSC: 10.1-.5; <i>Praxis</i> 0700: VII.1, .4; CR: III.A.2.b.5)          | 1. (1997 SSC: 10.1; 0700: VII: 4) Historical and philosophical foundations of agricultural education student organizations.  |
|   | 2. (1997 SSC: 10.2) Leadership development.  |
|   | 3. (1997 SSC: 10.3; 0700: VII: 1) Developing and implementing the program activities of an agricultural education student organization.  |
|   | 4. (1997 SSC: 10.5; 0700: VII: 1) Parliamentary principles and procedures.   |
|   | 5. (1997 SSC: 10.4; (0700: VII: 1) The role of the advisor in an agricultural education student organization.  |