SOUTH DAKOTA STATE UNIVERSITY SUSTAINABILITY-RELATED LEARNING OUTCOMES

UNDERGRADUATE PROGRAMS	
Agricultural & Biosystems Engineering (B.S.)	A few years after graduation, SDSU ABE graduates will: • Use methods of analysis involving use of mathematics, fundamental physical and biological sciences, and the computer skills needed for the practice of agricultural and biosystems engineering. • Practice design skills, including the ability to think creatively, to formulate problem statements, to communicate effectively, to synthesize information, and to evaluate and implement problem solutions both individually and in team settings. Academic Programs 139 • Address issues of ethics, safety, professionalism, diversity, globalization, environmental impact, and social and economic impact in engineering practice. • Contribute to agricultural profitability and enhance environmental and biological systems through the development, adaptation, and proper use of improved and safer engineering technologies, production systems, and management practices.
Agricultural & Environmental Law Certificate	Students earning a certificate in Agricultural and Environmental Law will have the ability to: • recognize, identify, and understand legal issues in agricultural and environmental law. • communicate effectively in written format as an individual and as a team member. • identify, research, and apply credible legal resources appropriate for agribusiness law and policy and environmental law and policy. • reinforce analytical/critical thinking skills applicable to business or environmental policy related to the law.

Agricultural Education, Communication & Leadership (B.S.) - Agricultural Education Specialization	• Demonstrate knowledge and skill across the broad field of the Agricultural, Food, and Natural Resources industries. • Demonstrate and apply educational content knowledge related to effective teaching and learning of diverse groups of secondary students. • Explain the importance of and show evidence of ethical and professional behaviors. • Locate and evaluate information to solve real world problems. • Evaluate core competencies and create plans for effective lifetime learning. • Demonstrate effective written and oral communications skills. • Evaluate a diverse spectrum of agriculturally related global challenges to communicate culturally responsible solutions to a variety of audiences.
Agricultural Education, Communication & Leadership (B.S.) - Communication Specialization	• Demonstrate knowledge and skill across the broad field of the Agricultural, Food, and Natural Resources industries. • Demonstrate and apply in-depth knowledge of journalism and mass communication. • Explain the importance of and show evidence of ethical and professional behaviors. • Locate and evaluate information to solve real world problems. • Evaluate core competencies and create plans for effective lifetime learning. • Demonstrate effective written and oral communication skills. • Evaluate a diverse spectrum of agriculturally related global challenges to communicate culturally responsible solutions to a variety of audiences.
Agricultural Education, Communication & Leadership (B.S.) - Leadership Specialization	• Demonstrate knowledge and skill across the broad field of the Agricultural, Food, and Natural Resources industries. • Demonstrate and apply in-depth knowledge of leadership principles. • Upon completion of the program students will explain the importance of and show evidence of ethical and professional behaviors. • Locate and evaluate information to solve real world problems. • Evaluate core competencies and create plans for effective lifetime learning. • Demonstrate effective written and oral communication skills. • Evaluate a diverse spectrum of agriculturally related global challenges to communicate culturally responsible solutions to a variety of audiences.
Agricultural Science (A.S.)	• Integrate knowledge across various academic disciplines and apply to agricultural careers. • Locate and evaluate information to aid in decision making. • Recognize the importance of continued learning in relation to their profession. • Identify diverse perspectives and understand global challenges in agriculture. • Demonstrate critical thinking and problem solving skills.
Agricultural Science (B.S.)	• Integrate knowledge across various academic disciplines and apply to agricultural careers. • Locate and evaluate information to aid in decision-making. • Recognize the importance of continued learning in relation to their profession. • Consider diverse perspectives and understand global challenges in agriculture. • Demonstrate critical thinking and problem solving skills. • Explain benefits of an agricultural minor or chosen emphasis. • Articulate their role in the agricultural industry through effective written and oral communication skills

Agricultural Systems Technology (B.S.)	• the ability to apply knowledge of mathematics and science. • an ability to design and conduct experiments, as well as to analyze and interpret data. • an ability to function on multidisciplinary teams. • an ability to identify, formulate, and solve problems. • an understanding of professional and ethical responsibility. • an ability to communicate effectively. • a recognition of the need for, and an ability to engage in life-long learning. • a knowledge of contemporary issues. • an ability to use the techniques, skills, and modern tools necessary to identify solutions to problems.
Agronomy (B.S.)	• Demonstrate a fundamental understanding of basic Agronomy principles and practices. • Demonstrate the ability to think creatively and to apply critical thinking skills when evaluating and analyzing information. • Demonstrate the ability to learn, develop, and apply skills for the application of existing and emerging knowledge and technologies in Agronomy. • Demonstrate the ability to apply scientific principles, quantitative skills, and other problem solving skills in Agronomy. • Demonstrate knowledge and application of ethical and sustainable practices in the agronomic fields. • Demonstrate the ability to effectively communicate (written, listening and oral) with both scientific and non-scientific audiences.
Animal Science (B.S.) - Food Animal Health Specialization	• Acquire knowledge of the core sciences and best management practices that are the foundation of animal science and husbandry. • Demonstrate effective written and oral communication skills using a variety of mediums and with various audience types and apply techniques to critically evaluate communication strategies regarding animal agriculture. • Demonstrate the ability to function as an effective member of a team. • Develop fact-based comparisons of both sides of contemporary issues that impact diversity, inclusion, equity, and professional ethics as related to animal agriculture. • Interpret, critically evaluate, and apply information in order to recognize problems and create solutions.
Animal Science (B.S.) - Industry Relations Specialization	• Acquire knowledge of the core sciences and best management practices that are the foundation of animal science and husbandry. • Demonstrate effective written and oral communication skills using a variety of mediums and with various audience types and apply techniques to critically evaluate communication strategies regarding animal agriculture. • Demonstrate the ability to function as an effective member of a team. • Develop fact-based comparisons of both sides of contemporary issues that impact diversity, inclusion, equity, and professional ethics as related to animal agriculture. • Interpret, critically evaluate, and apply information in order to recognize problems and create solutions.
Animal Science (B.S.) - Production Management Specialization	• Acquire knowledge of the core sciences and best management practices that are the foundation of animal science and husbandry. • Demonstrate effective written and oral communication skills using a variety of mediums and with various audience types and apply techniques to critically evaluate communication strategies regarding animal agriculture. • Demonstrate the ability to function as an effective member of a team. • Develop fact-based comparisons of both sides of contemporary issues that impact diversity, inclusion, equity, and professional ethics as related to animal agriculture. • Interpret, critically evaluate, and apply information in order to recognize problems and create solutions.

Animal Science (B.S.) - Science Specialization	• Acquire knowledge of the core sciences and best management practices that are the foundation of animal science and husbandry. • Demonstrate effective written and oral communication skills using a variety of mediums and with various audience types and apply techniques to critically evaluate communication strategies regarding animal agriculture. • Demonstrate the ability to function as an effective member of a team. • Develop fact-based comparisons of both sides of contemporary issues that impact diversity, inclusion, equity, and professional ethics as related to animal agriculture. • Interpret, critically evaluate, and apply information in order to recognize problems and create solutions.
Architecture (B.F.A.)	• Move ideas from abstract to concrete through graphical methods. • Measure and understand the impact of ideas on theoretical, social, political, economic, cultural, and environmental contexts. • Use a diverse range of mediated practices to think about and convey architectural ideas, including writing, investigating, speaking, drawing, and modeling. • Comprehend the technical aspects of both construction and mediating technologies and be able to apply that comprehension to architectural solutions. • Capacity to synthesize a wide range of variables into an integrated design solution. • Understand business principles for the practice of architecture, including management, advocacy, and the need to act legally, ethically, and critically for the good of the client, society, and the public
Bioprocessing Sciences Certificate	• Understand how cells or cellular components of biomaterials can be grown to produce commercial quantities of desired raw products (upstream bioprocessing). • Understand and use biomass separation techniques to extract desired product from cell debris (downstream bioprocessing). • Apply bioprocessing principles (e.g., fermentation, heat, mass, and energy transfer) to manufacturing of renewable energy and commercial bioproducts or to management of environmental waste. • Apply principles of quality control, operations efficiency, project management, and safety to manufacturing of bio-based products
Bioprocessing Sciences Minor	• Understand how cells or cellular components of biomaterials can be grown to produce commercial quantities of desired raw products (upstream bioprocessing). • Understand and use biomass separation techniques to extract desired product from cell debris (downstream bioprocessing). • Apply bioprocessing principles (e.g., fermentation, heat, mass, and energy transfer) to manufacturing of renewable energy and commercial bioproducts or to management of environmental waste. • Apply principles of quality control, operations efficiency, project management, and safety to manufacturing of bio-based products. • Demonstrate understanding and applications of operational protocol used in a bioprocessing discipline. • Demonstrate a working knowledge of one or more industries that utilize bioprocessing technologies.

Botany Minor	• demonstrate understanding of ecological and environmental principles required for management of natural resources for multiple-uses, including (but not limited to) wildlife habitat, water management, ecosystem services, recreation and livestock production; • describe how natural resource management fits into the context of society and how societal factors (e.g., economics, policy, laws, regulations, attitude, behaviors, norms) influence natural resource management; • demonstrate the ability to lead and work with others as appropriate to successfully manage natural resources; • demonstrate appropriate use of natural resource field and lab techniques as well as contemporary technologies; • demonstrate the ability to appropriately analyze and critically evaluate data and other information; • demonstrate the ability to effectively communicate (both written and orally) with both scientific and non-scientific audiences; and • demonstrate an understanding of the professional and ethical responsibility that is imperative of a natural resource manager.
Chemistry (B.S.)	• Understand the basic concepts fundamental to chemistry. • Be properly prepared for laboratory investigations. • Develop in-depth knowledge of at least four of the five subdisciplines of chemistry (analytical, biochemistry, inorganic, organic, and physical). • Demonstrate knowledge of modern chemistry topics, which could include catalysis, environmental chemistry, green/sustainable chemistry, materials science, and toxicology. • Be able to design and execute experiments, analyze data, and use the chemical literature. • Be able to synthesize the curricular knowledge and skills in a capstone (research) experience. • Understand the scientific process and develop problem-solving skills. • Retrieve information effectively. • Develop chemical safety skills. • Be able to rely on collaboration, effective teamwork, safety, and ethical practices. • Learn professional ethics. • Have proficiency in essential green chemistry competencies. • Be able to assess, comprehend, and communicate science.

Chemistry Education (B.S.)	• Understand the basic concepts fundamental to chemistry. • Be properly prepared for laboratory investigations. • Develop in-depth knowledge of at least four of the five subdisciplines of chemistry (analytical, biochemistry, inorganic, organic, and physical). • Demonstrate knowledge of modern chemistry topics, which could include catalysis, environmental chemistry, green/sustainable chemistry, materials science, and toxicology. • Be able to design and execute experiments, analyze data, and use the chemical literature. • Be able to synthesize the curricular knowledge and skills in a capstone (research) experience. • Understand the scientific process and develop problem-solving skills. • Retrieve information effectively. • Develop chemical safety skills. • Be able to rely on collaboration, effective teamwork, safety, and ethical practices. • Learn professional ethics. • Have proficiency in essential green chemistry competencies. • Be able to assess, comprehend, and communicate science. • Demonstrate teaching effectiveness. • Illustrate learner development. • Recognize learning differences and learning environments. • Formulate content knowledge. • Implement uses of multiple methods of assessment to engage learners in their own growth, to monitor learner progress, and to guide the teacher's and learner's decision making. • Create plans of instruction that supports every student in meeting rigorous learning goals by drawing upon knowledge of content areas, curriculum, cross-disciplinary skills, and pedagogy, as well as knowledge of learners and the community context. • Use a variety of instructional strategies to encourage learners to develop deep understanding of content areas and their connections, and to build skills to apply knowledge in meaningful ways. • Engage in ongoing professional learning and use evidence to continually evaluate his/her practice, particularly the effects of his/her choices and actions on others (learners, families, other professionals, and the community), and adapt practice to meet the needs of each learner. • Seek appropriate leadership roles and opportunities to take responsibility for student learning, to collaborate with learners, families, colleagues, other school professionals, and community members to ensure learner growth, and to advance the profession.
Civil Engineering (B.S.)	1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics. 2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors. 3. An ability to communicate effectively with a range of audiences. 4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts. 5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives. 6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions. 7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Community & Regional Planning (B.S.)	• Acquire planning process methods by developing tools for stakeholder involvement and community engagement and working with diverse communities. They will acquire skills in governance and participation by appreciating the roles of officials, stakeholders, and community members in planned change. • Demonstrate foundational and specialized knowledge concerning the meaning of planning, planning theory, planning law, and human settlements and the history of planning. • Understand professional ethics and responsibility by learning the key issues of planning ethics and related questions of the ethics of public decision-making, research, and client representation. • Information Literacy • Explore the future scenarios by understanding of the relationships between past, present, and future in planning domains, as well as the potential for methods of design, analysis, and intervention to influence the future. They also will demonstrate proficiency in global dimensions of planning by appreciating interactions, flows of people and materials, cultures, and differing approaches to planning across world regions. • Acquire the ability to create and implement plans using integrative tools sound plan formulation, adoption, and implementation and enforcement. They will create sustainability and environmental quality by appreciating natural resource and pollution control factors in planning, and understanding of how to create sustainable futures. They will understand growth and development by appreciating economic, social, and cultural factors in urban and regional growth and change. • Acquire leadership skills by learning how to use tools for attention, formation, strategic decision-making, team building, and organizational/community motivation. • Demonstrate openness to new perspectives and diverse others, evaluate the complexity inherent to multiple perspectives, and demonstrate the ability to reassess their personal perspective when appropriate, particularly in regard to social justice and equity concerns in planning
Conservation Planning & Park Management (B.S.)	• Demonstrate understanding of ecological and environmental principles required for management of natural resources for multiple-uses, including (but not limited to) wildlife habitat, water management, ecosystems services, recreation, and livestock production. • Describe how natural resource management fits into the context of society and how societal factors (e.g., economics, policy, laws, regulations, attitudes, behaviors, norms) influence natural resource management. • Lead and work with others as appropriate to successfully manage natural resources. • Demonstrate appropriate use of natural resource field & lab techniques as well as contemporary technology. • Analyze and critically evaluate data and other information. • Effectively communicate (both written and orally) with both scientific and non-scientific audiences. • Demonstrate an understanding of the professional and ethical responsibility that is necessary for a natural resource manager.

Conservation Planning & Park Management (B.S.) - Park Administration & Management Specialization	• Demonstrate understanding of ecological and environmental principles required for management of natural resources for multiple-uses, including (but not limited to) wildlife habitat, water management, ecosystems services, recreation, and livestock production. Academic Programs 175 • Describe how natural resource management fits into the context of society and how societal factors (e.g., economics, policy, laws, regulations, attitudes, behaviors, norms) influence natural resource management. • Lead and work with others as appropriate to successfully manage natural resources. • Demonstrate appropriate use of natural resource field & lab techniques as well as contemporary technology. • Analyze and critically evaluate data and other information. • Effectively communicate (both written and orally) with both scientific and non-scientific audiences. • Demonstrate an understanding of the professional and ethical responsibility that is necessary for a natural resource manager.
Construction Management (B.S.)	1. An ability to identify, formulate, and solve broadly defined technical or scientific problems by applying knowledge of mathematics and science and/or technical topics to areas relevant to the discipline. 2. An ability to formulate or design a system, process, procedure or program to meet desired needs. 3. An ability to develop and conduct experiments or test hypotheses, analyze and interpret data and use scientific judgment to draw conclusions. 4. An ability to communicate effectively with a range of audiences. 5. An ability to understand ethical and professional responsibilities and the impact of technical and/or scientific solutions in global, economic, environmental, and societal contexts. 6. An ability to function effectively on teams that establish goals, plan tasks, meet deadlines, and analyze risk and uncertainty
Crop Protection Minor	• achieve a fundamental understanding of basic Crop Protection principles and practices; • gain an understanding of the scope, activities, and nomenclature in the field of Entomology and Plant Pathology, and Weed Science; • demonstrate the ability to effectively communicate (written, listening, and oral) with both scientific and non-scientific audiences; • be an advocate for responsible and sustainable Crop Protection and Agriculture in society; and • be a lifelong learner.
Ecology & Environmental Science (B.S.)	• Understand ecological and environmental principles required for management of natural resources for multiple-uses, including (but not limited to) wildlife habitat, water management, ecosystems services, recreation, and livestock production. • Describe how natural resource management fits into the context of society and how societal factors (e.g., economics, policy, laws, regulations, attitudes, behaviors, norms) influence natural resource management. • Lead and work with others as appropriate to successfully manage natural resources. • Apply natural resource field and lab techniques and contemporary technologies to management of natural resources. • Analyze and critically evaluate data and other information. • Analyze and critically evaluate data and other information. • Communicate (both written and orally) with both scientific and non-scientific audiences. • Display professional and ethical behavior consistent with that expected in a natural resource management field.

Ecology & Environmental Science (B.S.) - Rangeland Ecology & Management Specialization	• Understand ecological and environmental principles required for management of natural resources for multiple-uses, including (but not limited to) wildlife habitat, water management, ecosystems services, recreation, and livestock production. • Describe how natural resource management fits into the context of society and how societal factors (e.g., economics, policy, laws, regulations, attitudes, behaviors, norms) influence natural resource management. • Lead and work with others as appropriate to successfully manage natural resources. • Apply natural resource field and lab techniques and contemporary technologies to management of natural resources. • Analyze and critically evaluate data and other information. • Analyze and critically evaluate data and other information. • Communicate (both written and orally) with both scientific and non-scientific audiences. • Display professional and ethical behavior consistent with that expected in a natural resource management field.
Electrical Engineering (B.S.)	1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics. 2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors. 3. an ability to communicate effectively with a range of audiences. 4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts. 5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives. 194 Academic Programs 6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions. 7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.
Engineering for Precision Agriculture Minor	• apply mathematics and engineering science to the analysis of systems for crop and livestock production, • combine sensor technologies with agronomic decision processes to develop solutions for specific agricultural production systems, • design systems to control the application of inputs to match spatial agronomic input plans, • demonstrate the ability to work effectively in an area of precision agricultural systems.

Fashion Studies & Retail Merchandising (B.S.)	• Apply industry terminology, theories, and concepts in appropriate ways to discuss and critique product quality, serviceability, regulatory compliance standards, merchandising strategies, market trends, retail environments, regulatory factors, and global factors related to the fashion and textile industry. • Demonstrate understanding of the fashion process, including the forces that drive fashion changes and diffusion of innovation and ideas. • Identify and interpret needs, wants, and aspirations of consumers, and outline how industry processes can be applied to forecast, plan, develop, produce, communicate, and sell profitable product lines of products that meet the marketplace' needs. • Demonstrate and apply knowledge about the role of dress as it reflects and shapes intra- and inter-cultural interactions, ideals, values, norms, traditions, appearance management, and human behavior. • Apply knowledge of the role of dress as it is used to create, express, and fulfill identities, lifestyles, and fantasies. • Understand the role of historic, socio-cultural, economic, technological, political, and psychological factors in aesthetic expression and development of styles. • Understand how aesthetics and the design process can support quality of life. • Demonstrate understanding how globalization, market conditions, diverse economic systems and political structures, regulatory factors, cultural norms and values, historic events, geographic locations, and social issues affect industry processes and sourcing strategies. • Identify and evaluate issues of social responsibility, environmental sustainability, professional behavior, and ethics related to the impact of individual, organizational, societal, and corporate decision-making. • Apply critical and creative thinking skills, including the ability to objectively evaluate and compare diverse perspectives. • Formulate sound conclusions and decisions by using appropriate technology, knowledge, and business practices to identify, assess, analyze relevant factors that influence the industry and related strategies. 204 Academic Programs • Apply qualitative and quantitative skills to problem solving and formulate creative strategies to current issues and future opportunities in the industry. • Use effective and professional written, oral, and visual communication skills to inform, explain, and support ideas, decisions, evaluations, and strategies. • Demonstrate ability to take appropriate responsibility for their personal and professional growth, including reflection and critiquing of their progress, outlining their career goals, and demonstrate self-directedness. • Illustrate effective team working and leadership skills within professional and culturally diverse environments.

Geographic Information Sciences (B.S.)	• Demonstrate foundational and specialized knowledge in both the physical and human sciences and their interconnectedness at local, regional, and global scales. • Interpret the ethical consequences of global issues concerning the environment to strengthen commitment to local, national, and global citizenship. • Demonstrate proficiency in the application of appropriate geographical technologies and techniques to address issues in the physical and/or human sciences. • Communicate geographic ideas clearly and effectively (e.g., maps, writing, oral presentations, posters, photos, flowcharts, tables, graphs, and illustrations). • Apply observations from laboratory and/or field experiences to analyze problems and offer solutions. • Demonstrate the ability to collect, organize, analyze, and synthesize information about people, places, and environments in a spatial-temporal context. • Explore complex local, regional, and global issues using a geographical perspective to formulate questions and draw informed conclusions that are based on critical scientific analysis and interpretation of information. • Demonstrate openness to new perspectives and diverse others, evaluate the complexity inherent to multiple perspectives, and demonstrate the ability to reassess their personal perspective when appropriate
Geographic Information Sciences Certificate	• acquire foundational and specialized knowledge in both the physical and human worlds and their interconnectedness at different scales; • effectively communicate geographical ideas using common media from the discipline (submitted samples might include maps, oral presentations, text, photos, illustrations, flowcharts, tables, graphs, graphics); • engage in applied learning, laboratory, and/or field experiences; • demonstrate the ability to collect, organize, analyze, and synthesize information about people, places, and environments in a spatial-temporal context.
Geography (B.A./B.S.)	• Demonstrate foundational and specialized knowledge in both the physical and human sciences and their interconnectedness at local, regional, and global scales. • Interpret the ethical consequences of global issues concerning the environment to strengthen commitment to local, national, and global citizenship. • Demonstrate proficiency in the application of appropriate geographical technologies and techniques to address issues in the physical and/or human sciences. • Communicate geographic ideas clearly and effectively (e.g., maps, writing, oral presentations, posters, photos, flowcharts, tables, graphs, and illustrations). • Apply observations from laboratory and/or field experiences to analyze problems and offer solutions. • Demonstrate the ability to collect, organize, analyze, and synthesize information about people, places, and environments in a spatial-temporal context. • Explore complex local, regional, and global issues using a geographical perspective to formulate questions and draw informed conclusions that are based on critical scientific analysis and interpretation of information.

Health Science Minor	• Apply public health principles, to selected disciplines. • Implement public health science methods and strategies through work with populations that incorporates principles from the fields of sociology, psychology, and human growth and development. • Apply basic human health concepts from selected sciences including biology, physiology, behavioral, and mental health. • Demonstrate an understanding of how environment and ecology affect aggregates and communities by advocating for the needs of people served by public health systems.
Honors College Distinction	• Effectively communicate ideas and beliefs with clarity, civility, and respect. • Analyze and integrate multiple sources of information and demonstrate applications of critical thinking. • Articulate personal values, beliefs, and self-identity. • Articulate the value of diversity, inclusion, and equity. • Demonstrate professionalism in a variety of contexts.
Horticulture (B.S.)	• Demonstrate a fundamental understanding of basic Horticultural principles and practices. • Demonstrate the ability to think creatively and to apply critical thinking skills when evaluating and analyzing information. • Demonstrate the ability to learn, develop, and apply skills for the application of existing and emerging knowledge and technologies in Horticulture. • Demonstrate the ability to apply scientific principles, quantitative skills, and other problem solving skills in Horticulture. • Demonstrate knowledge and application of ethical and sustainable practices in the Horticultural fields. • Demonstrate a fundamental understanding of local food production principles and practices. • Demonstrate a fundamental understanding of plant identification, selection, use, and maintenance of plant material best suited for conventional and sustainable landscapes. • Demonstrate the ability to effectively communicate (written, listening and oral) with both scientific and non-scientific audiences
Leadership & Management of Nonprofit Organizations (B.S.)	• Apply knowledge of fundamental nonprofit management terms, theories, and skills. • Demonstrate and apply in-depth knowledge of leadership theories. • Demonstrate the ability to function as an effective member of a team. • Demonstrate respect and understanding towards diverse cultures and beliefs of individuals and communities. • Explain the importance of and show evidence of ethical and professional behaviors. • Design, implement, and evaluate projects for a variety of audiences. • Demonstrate effective written and/or oral communication skills to appropriate audiences.

Mechanical Engineering (B.S.)	1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics. 2. the ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors. 3. an ability to communicate effectively with a range of audiences. 4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and social contexts. 5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives. 6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions. 7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.
Mechanical Engineering (B.S.) - Aerospace Engineering Specialization	1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics. 2. the ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors. 3. an ability to communicate effectively with a range of audiences. 4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and social contexts. 5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives. 6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions. 7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.
Mental Health Services Minor	• apply the biopsychosocial foundations of behavior and evidence-based counseling approaches to diverse individuals and groups. • understand and apply the major categories and typical signs and symptoms of mental disorders. • demonstrate knowledge of and perform in accordance with the main ethical, legal, clinical, and professional issues involved in the helping professions. • demonstrate knowledge of the leading counseling/psychotherapy systems and the major appropriately apply therapeutic interventions of these systems. • demonstrate multicultural sensitivity and awareness of special treatment needs of diverse populations in American society. • demonstrate effective and professional oral and written communication skills.

Natural Resource Law Enforcement (B.S.)	• Demonstrate understanding of ecological and environmental principles required for management of natural resources for multiple-uses, including (but not limited to) wildlife habitat, water management, ecosystems services, recreation, and livestock production. • Describe how natural resource management fits into the context of society and how societal factors (e.g., economics, policy, laws, regulations, attitudes, behaviors, norms) influence natural resource management. • Demonstrate the ability to lead and work with others as appropriate to successfully manage natural resources. • Demonstrate appropriate use of natural resource field and lab techniques as well as contemporary technology. • Demonstrate the ability to appropriately analyze and critically evaluate data and other information. • Demonstrate the ability to effectively communicate (both written and orally) with both scientific and non-scientific audiences. • Demonstrate an understanding of the professional and ethical responsibility that necessary for a natural resource professional.
Operations Management (B.S.)	1. an ability to identify, formulate, and solve broadly defined technical or scientific problems by applying knowledge of mathematics and science and/or technical topics to areas relevant to the discipline. 2. an ability to formulate or design a system, process, procedure, or program to meet desired needs. 3. an ability to develop and conduct experiments or test hypotheses, analyze and interpret data and use scientific judgement to draw conclusions. 4. an ability to communicate effectively with a range of audiences. 5. an ability to understand ethical and professional responsibilities and the impact of technical and/or scientific solutions in global, economic, environmental, and societal contexts. 6. An ability to function effectively on teams that establish goals, plan tasks, meet deadlines, and analyze risk and uncertainty. 7. An ability to understand the value of diverse perspectives in the workplace.
Physics (B.S.)	• Support an environment that is inclusive to everyone regardless of race, ethnicity, gender, gender identity, sexual orientation, or disability status. • Be able to write a laboratory report that is appropriate for the discipline of physics and suitable for publication in an undergraduate research journal. • Defend a hypothesis or a research project by giving an oral presentation in a colloquium setting. • Solve complex physics problems by applying scientific and mathematical principles. • Design experiments; build and use equipment; gather, analyze and interpret experimental data; and draw conclusions based upon the data. • Propose creative solutions for key issues of scientific, social, economic, or environmental merit and defend their hypothesis in either a research paper or by generating a proposal for an experimental design.

Physics (B.S.) - Science Teaching Specialization	• Support an environment that is inclusive to everyone regardless of race, ethnicity, gender, gender identity, sexual orientation, or disability status. • Write a laboratory report that is appropriate for the discipline of physics and suitable for publication in an undergraduate research journal. • Defend a hypothesis or a research project by giving an oral presentation in a colloquium setting. • Solve complex physics problems by applying scientific and mathematical principles. • Design experiments; build and use equipment; gather, analyze and interpret experimental data; and draw conclusions based upon the data. • Propose creative solutions for key issues of scientific, social, economic, or environmental merit and defend their hypothesis in either a research paper or by generating a proposal for an experimental design.
Precision Agriculture (B.S.)	• Demonstrate foundational and specialized knowledge in crop management, environmental stewardships, and precision agriculture technologies and their integrations at local, regional, and global scales. • Explore complex local, regional, and global issues using a precision agriculture perspective to formulate questions and draw informed conclusions that are based on critical scientific analysis and interpretation of information. • Demonstrate economic and environmental proficiency in applying the proper principles and technologies of precision agriculture and to address socioeconomic issues in Agricultural sciences. • Demonstrate the ability to collect, organize, analyze, and synthesize accurate digital field maps using specialized software and have the operational knowledge for specialized precision agriculture equipment, computers, and Academic Programs 263 spreadsheet applications to produce meaningful management recommendations. • Effectively communicate and demonstrate openness to new perspectives and diverse others, and demonstrate the ability to reassess their personal perspective within precision agriculture activities when appropriate.
Precision Agriculture Minor	• apply mathematics and engineering science to the analysis of systems for crop and livestock production, • combine sensor technologies with agronomic decision processes to develop solutions for specific agricultural production systems, • design systems to control the application of inputs to match spatial agronomic input plans, • demonstrate the ability to work effectively in an area of precision agricultural systems.

Public Relations (B.A./B.S.)	• Apply the principles and laws of freedom of speech and press, in a global context, and for the country in which the institution that invites ACEJMC is located; • Demonstrate an understanding of the multicultural history and role of professionals and institutions in shaping communications; • Demonstrate culturally proficient communication that empowers those traditionally disenfranchised in society, especially as grounded in race, ethnicity, gender, sexual orientation and ability, domestically and globally, across communication and media contexts; • Present images and information effectively and creatively, using appropriate tools and technologies; • Write correctly and clearly in forms and styles appropriate for the communications professions, audiences and purposes they serve; • Demonstrate an understanding of professional ethical principles and work ethically in pursuit of truth, accuracy, fairness and diversity; • Apply critical thinking skills in conducting research and evaluating information by methods appropriate to the communications professions in which they work; • Effectively and correctly apply basic numerical and statistical concepts; • Critically evaluate their own work and that of others for accuracy and fairness, clarity, appropriate style and grammatical correctness; • Apply tools and technologies appropriate for the communications professions in which they work
Ranch Management Minor	• develop a complete ranch management plan including a vision statement, key assumptions, marketing plan, operational plan, and financial plan. • describe and implement best management practices for financial data collection, reports and analysis. • describe and implement best management practices for grassland ecosystems. • describe and implement best management practices for animal husbandry practices for their species of choice.
Rangeland Ecology & Management Minor	• demonstrate understanding of ecological and environmental principles required for management of natural resources for multiple-uses, including (but not limited to) wildlife habitat, water management, ecosystem services, recreation and livestock production; • describe how natural resource management fits into the context of society and how societal factors (e.g., economics, policy, laws, regulations, attitude, behaviors, norms) influence natural resource management; • demonstrate the ability to lead and work with others as appropriate to successfully manage natural resources; • demonstrate appropriate use of natural resource field and lab techniques as well as contemporary technologies; • demonstrate the ability to appropriately analyze and critically evaluate data and other information; • demonstrate the ability to effectively communicate (both written and orally) with both scientific and non-scientific audiences; and • demonstrate an understanding of the professional and ethical responsibility that is imperative of a natural resource manager
Soil Science Certification	• achieve a fundamental understanding of basic Soil Science principles and practices; and • gain an understanding of soil biology, soil chemistry, conservation, contaminants, and land management in preparation for certification or licensure in the field.

Sustainability Minor	• Define sustainability and articulate an understanding of the linkages between social, economic, and environmental perspectives. • Recognize and assess how sustainability impacts the natural environment and human communities. • Apply measures of sustainability and an evidence-based, interdisciplinary approach to issues of social, environmental and economic justice.
Sustainable Energy Systems Minor	• apply mathematics and engineering science to the analysis of energy conversion systems. • understand and apply the concept of sustainability to the design of energy conversion systems. • demonstrate competency in analysis and design of a particular type of energy converting device or system. 322 Academic Programs • demonstrate the ability to work effectively in an area of sustainable energy systems.
Sustainable Local Foods Minor	• articulate the impact of different types of fruit and vegetable production systems on the concept of sustainability. • recognize that modern food production systems are highly complex in terms of meeting the global demand for food and are driven by many economic, social, and environmental factors. • describe how the local production of fruits and vegetables can support local economies and address issues of food insecurity and human health at the same time. • experience hands-on activities of planning, growing, storage, preparation, and marketing of food crops. • explain the basics of nutrient needs of humans
Swine Science Certificate	• integrate disciplines and concepts in order to facilitate problem solving, creating a more efficient and sustainable production system. • combine scientific principles and management skills involved in pork production. • recognize available career opportunities within the pork industry. • apply personnel, facility, fiscal, and livestock management. • perform basic swine husbandry. • understand the impact of societal and industry issues on production management systems. • explain the pork structure and trends, including production, packing, and integration.
Wildlife & Fisheries Sciences (B.S.)	• Understand ecological and environmental principles required for management of natural resources for multiple-uses, including (but not limited to) wildlife habitat, water management, ecosystems services, recreation, and livestock production. • Describe how natural resource management fits into the context of society and how societal factors (e.g., economics, policy, laws, regulations, attitudes, behaviors, norms) influence natural resource management. • Lead and work with others as appropriate to successfully manage natural resources. Academic Programs 283 • Apply natural resource field and lab techniques and contemporary technologies to management of natural resources. • Analyze and critically evaluate data and other information. • Communicate (both written and orally) with both scientific and non-scientific audiences. • Display professional and ethical behavior consistent with that expected in a natural resource management field.
Wizipan Leadership & Sustainability Certificate	• Identify personal leadership style, conflict management, and approaches to team building and strategic planning. • Demonstrate critical thinking and problem-solving skills. • Identify critical sustainability issues for self, community, environment, and culture. • Lead sustainable change initiatives. • Combine Indigenous knowledge and environmental science to rebuild a better world

GRADUATE PROGRAMS	
Geography (M.S.)	• Critical thinking: Demonstrate foundational and specialized knowledge in both the physical and human sciences and their interconnectedness at local, regional, and global scales. • Critical thinking: Interpret the ethical consequences of global issues concerning the environment to strengthen commitment to local, national, and global citizenship. • Problem solving: Demonstrate proficiency in the application of appropriate geographical technologies and techniques to address issues in the physical and/or human sciences. • Written communication: Communicate geographic ideas clearly and effectively (e.g., maps, writing, oral presentations, posters, photos, flowcharts, tables, graphs, and illustrations). • Creative thinking: Apply observations from laboratory and/or field experiences to analyze problems and offer solutions. • Creative thinking: Demonstrate the ability to collect, organize, analyze, and synthesize information about people, places, and environments in a spatial temporal context. • Inquiry and analysis: Explore complex local, regional, and global issues using a geographical perspective to formulate questions and draw informed conclusions that are based on critical scientific analysis and interpretation of information
Geography (M.S.) - Geographic Information Sciences Specialization	• Critical thinking: Demonstrate foundational and specialized knowledge in both the physical and human sciences and their interconnectedness at local, regional, and global scales. • Critical thinking: Interpret the ethical consequences of global issues concerning the environment to strengthen commitment to local, national, and global citizenship. • Problem solving: Demonstrate proficiency in the application of appropriate geographical technologies and techniques to address issues in the physical and/or human sciences. • Written communication: Communicate geographic ideas clearly and effectively (e.g., maps, writing, oral presentations, posters, photos, flowcharts, tables, graphs, and illustrations). • Creative thinking: Apply observations from laboratory and/or field experiences to analyze problems and offer solutions. • Creative thinking: Demonstrate the ability to collect, organize, analyze, and synthesize information about people, places, and environments in a spatial temporal context. • Inquiry and analysis: Explore complex local, regional, and global issues using a geographical perspective to formulate questions and draw informed conclusions that are based on critical scientific analysis and interpretation of information.
Geospatial Science & Engineering (Ph.D.) - Geography Specialization	• Problem solving: Demonstrate proficiency in the application of appropriate geographical technologies and techniques to address issues in the physical and/or human sciences. • Written communication: Communicate geographic ideas clearly and effectively (e.g., maps, writing, oral presentations, posters, photos, flowcharts, tables, graphs, and illustrations). • Creative thinking: Apply observations from laboratory and/or field experiences to analyze problems and offer solutions. • Critical thinking: Demonstrate foundational and specialized knowledge in both the physical and human sciences and their interconnectedness at local, regional, and global scales. • Critical thinking: Interpret the ethical consequences of global issues concerning the environment to strengthen commitment to local, national, and global citizenship. • Creative thinking: Demonstrate the ability to collect, organize, analyze, and synthesize information about people, places, and environments in a spatial temporal context. • Inquiry and analysis: Explore complex local, regional, and global issues using a geographical perspective to formulate questions and draw informed conclusions that are based on critical scientific analysis and interpretation of information.

Geospatial Science & Engineering (Ph.D.) - Remote Sensing Specialization	• Problem solving: Demonstrate proficiency in the application of appropriate geographical technologies and techniques to address issues in the physical and/or human sciences. • Written communication: Communicate geographic ideas clearly and effectively (e.g., maps, writing, oral presentations, posters, photos, flowcharts, tables, graphs, and illustrations). • Creative thinking: Apply observations from laboratory and/or field experiences to analyze problems and offer solutions. • Critical thinking: Demonstrate foundational and specialized knowledge in both the physical and human sciences and their interconnectedness at local, regional, and global scales. • Critical thinking: Interpret the ethical consequences of global issues concerning the environment to strengthen commitment to local, national, and global citizenship. • Creative thinking: Demonstrate the ability to collect, organize, analyze, and synthesize information about people, places, and environments in a spatial temporal context. • Inquiry and analysis: Explore complex local, regional, and global issues using a geographical perspective to formulate questions and draw informed conclusions that are based on critical scientific analysis and interpretation of information.
Grassland Management Certificate	• Effectively use oral and written communications to convey knowledge of grassland management. • Demonstrate high level of analytical and critical thinking skills to enable problem solving in grassland management. • Demonstrate quantitative skills including field sampling and data interpretation for effective analysis and management of natural resources. • Demonstrate knowledge of ecological principles as a foundation for understanding and applying principles of natural resource management
Public Health (M.P.H.)	• History, philosophy and values: Explain public health history, philosophy and values. • Core functions and essential services: Identify the core functions of public health and the 10 Essential Services. • Quantitative and qualitative methods: Explain the role of quantitative and qualitative methods and sciences in describing and assessing a population's health. • Morbidity and mortality: List major causes and trends of morbidity and mortality in the US or other community relevant to the school or program. • Prevention: Discuss the science of primary, secondary and tertiary prevention in population health, including health promotion, screening, etc. • Advancing knowledge: Explain the critical importance of evidence in advancing public health knowledge. • Environmental factors: Explain the effects of environmental factors on a population's health. • Biological and genetic factors: Explain the biological and genetic factors that affect a population's health. • Behavioral and psychological factors: Explain the behavioral and psychological factors that affect a population's health. • Social determinants of health: Explain the social, political and economic determinants of health and how they contribute to population health and health inequities. • Globalization: Explain how globalization affects global burdens of disease. • One health: Explain an ecological perspective on the connection among human health, animal health and ecosystem health. • Competency #1-4 - Evidence-based Approaches to Public Health • Apply epidemiological methods to the breadth of settings and situations in public health practice. • Select quantitative and qualitative data collection methods appropriate for a given public health context. • Evidence-based Approaches to Public Health: Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software as appropriate. • Interpret results of data analysis for public health research, policy and practice. • Competency #5-6 - Public Health & Health Care Systems: • Compare the organization, structure and function of health care, public health and regulatory systems across national and international settings. • Discuss the means by which structural bias, social inequities and racism undermine health and create challenges to achieving health equity at organizational, community and societal levels. • Competency #7-11 - Planning & Management to Promote Health • Assess population needs, assets and capacities that affect communities' health. • Apply awareness of cultural values and practices to the design or implementation of public health policies or programs. • Design a population-based policy, program, project or intervention. • Explain basic principles and tools of budget and resource management. • Select methods to evaluate public health programs. • Competency #12-15 - Policy in Public Health • Discuss multiple dimensions of the policy-making process, including the roles of ethics and evidence. • Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes. • Advocate for political, social and economic policies and programs that will improve health in diverse populations. • Evaluate policies for their impact on public health and health equity. • Competency #16-17 – Leadership • Apply principles of leadership, governance and management, which include creating a vision, empowering others, fostering collaboration and guiding decision making. • Apply negotiation and mediation skills to address organizational or community challenges. • Competency #18-20 – Communication • Select communication strategies for different audiences and sectors. • Communicate audience-appropriate public health content, both in writing and through oral presentation. • Describe the importance of cultural competence in communicating public health content. • Competency #21 - Interprofessional Practice • Perform effectively on interprofessional teams. • Competency #22 - Systems Thinking • Apply systems thinking tools to a public health issue.

Wildlife & Fisheries Sciences (M.S.) - Fisheries Sciences Specialization	• Be knowledgeable regarding biological systems at a level appropriate to a M.S. degree holder. • Be able to effectively express themselves orally and in written form. • Understand the scientific method of solving problem. • Be computer and statistically capable. • Be specialized in some area of wildlife or fisheries, but still be broadly based in knowledge. • Be able to conduct scholarly research. • Understand the relationships between biological information and socioeconomic factors. • Demonstrate professional development, especially in regard to the need for continued learning after their degree program. • Develop a concern and feeling for the natural resources of the world.
Wildlife & Fisheries Sciences (M.S.) - Wildlife Sciences Specialization	• Be knowledgeable regarding biological systems at a level appropriate to a M.S. degree holder. • Be able to effectively express themselves orally and in written form. • Understand the scientific method of solving problems. • Be computer and statistically capable. • Be specialized in some area of wildlife or fisheries, but still be broadly based in knowledge. • Be able to conduct scholarly research. • Understand the relationships between biological information and socioeconomic factors. 132 Academic Programs • Demonstrate professional development, especially in regard to the need for continued learning after their degree program. • Develop a concern and feeling for the natural resources of the world.
Wildlife & Fisheries Sciences (Ph.D.)	• Be knowledgeable regarding biological systems at a level appropriate to a Ph.D. degree holder. • Be able to effectively express themselves orally and in written form. • Understand the scientific method of solving problems. • Be computer and statistically capable. • Be specialized in some area of wildlife or fisheries, but still be broadly based in knowledge. • Be able to conduct scholarly research. • Understand the relationships between biological information and socioeconomic factors. • Demonstrate professional development, especially in regard to the need for continued learning after their degree program. • Develop a concern and feeling for the natural resources of the world.

Academic Advising Certificate	• Demonstrate case conceptualization skills for context for the delivery of academic advising. Students will understand the history, role, and values of academic advising; theory relevant to academic advising; academic advising approaches, strategies, and expected outcomes; and how equitable and inclusive environments are created and maintained. Students will also be able to articulate a personal philosophy of academic advising. • Apply a holistic, systems, legal, and evidence-based approach to advising. Students will learn institution specific history, mission, values, and culture; curriculum, degree programs, academic requirements and options; institution specific policies, procedures, rules, and regulations; legal guidelines of advising practice including privacy regulations and confidentiality; characteristics, needs, and experiences of major and emerging student populations; campus and community resources that support student success; information technology applicable to relevant advising roles; and engaging in on-going assessment and development of the advising practice. • Demonstrate essential interviewing and counseling skills for academic advising. This includes creating rapport and building academic advising relationships; communicating in an inclusive and respectful manner; planning and conducting successful advising interactions; promoting student understanding of the logic and purpose of the curriculum; and facilitating problem solving, decision-making, meaning-making, planning, and goal setting. • Collaborate within the higher education community to develop academic advising initiatives that promote the academic, social, and career success of individuals in higher education settings. This includes partnering with academic advisors and advising networks during professional development opportunities to learn new and emerging practices.
Community Development Certificate	• Facilitate Communities/Community Action: Apply critical thinking skills to understanding and evaluating how communities work and take action, as well as to use, design and evaluate tools and strategies to assist communities in making change. • Promote broad-based decision making and action: Have a broad conceptual view of community and organizational decision-making processes and strategies and can identify, use, design, and evaluate tools and strategies for promoting broad-based decision making and action. • Identify strategies to improve economic, social, cultural, and environmental conditions: Apply critical thinking skills to identifying, using, designing, and evaluating strategies to improve economic, social, cultural and environmental conditions. • Apply a systemic holistic approach: Have a broad conceptual view of the need for communities to balance development among all the community capitals and identify, use, design, and evaluate strategies to assist communities and organizations in seeking balance. • Appreciate the norms of behavior for the profession

Human Sciences (M.S.) - Developmental Sciences Specialization	• Human Development - Students will demonstrate a comprehensive knowledge and understanding of the major human development domains. • Diversity Students will demonstrate a comprehensive knowledge of multicultural and pluralistic trends, including characteristics and concerns within and among diverse groups nationally and internationally. • Integration of Developmental Science - Utilizing practice, prevention, and policy, students will demonstrate a comprehensive understanding of the developmental sciences. • Communication - Students will demonstrate critical and innovative thinking
Human Sciences (M.S.) - Family & Consumer Sciences Education Specialization	• Nutrition - Students will demonstrate comprehensive knowledge of the nutritional value of food and the necessary steps for food preparation and safety. • Diversity - Students will demonstrate a comprehensive knowledge of multicultural and pluralistic trends, including characteristics and concerns within and among diverse groups nationally and internationally. • Careers - Students will demonstrate a comprehensive understanding of the varied careers available to individuals who pursue a career in this area. • Communication - Students will demonstrate critical and innovative thinking
Human Sciences (M.S.) - Merchandising Specialization	• Demonstrate the ability to identify and understand theories, principles, practices and terminology related to the merchandising industry. • Demonstrate competency in communicating effectively using oral and written techniques, to include the use of technology, in the gathering and professional presentation of information. • Apply their knowledge of leadership, planning, and controlling to business activities and merchandising organizations. • Analyze and evaluate the triple bottom-line (economic, social, environmental) impact of sustainable merchandising industry activities and processes. • Demonstrate strong research, analytical and strategic decision-making skills.
Public Health Certificate	• Describe public health and its core functions. • Explain how various factors, including environmental factors, biological factors, psychological factors, and social determinants of health, contribute to population health and health disparities. • Apply epidemiological principles to collect and analyze public health data. • Develop public health programs or interventions based on population-needs and select appropriate methods to evaluate such programs.

Transdisciplinary Childhood Obesity Prevention Certificate	• Understand the need for transdisciplinary teams and gain skills required to work effectively within a transdisciplinary team. • Define the Social Ecological Model and demonstrate the ability to apply the model to obesity prevention for a variety of populations. • Understand the current epidemiology of childhood obesity and be able to identify and discuss a multitude of factors that contribute to the obesity epidemic using current evidence. • Identify a problem that contributes to obesity prevalence and the issues the contribute to it. Define the level of the Social Ecological Model of each issue and use the information to think comprehensively about strategies that have been attempted to improve the problem, and innovative transdisciplinary ideas for future impact. • Identify and describe multiple methods of assessing nutrition and physical activity. • Utilize multiple methods of assessing nutrition and physical activity. • Interpret and evaluate nutrition and physical activity data. • Synthesize material and apply knowledge to discuss the application of nutrition and physical activity assessment tools in different scenarios.