

Endorsement in Natural Science: Undergraduate Knowledge Base

<p>Outcome 1. Inquire and Reflect</p> <p>Teacher candidates inquire and reflect to facilitate learning and foster development in all learners.</p> <p>1.1 Inquire - Candidates are curious and persist to seek solutions with regard to professional decisions through inquiry.</p> <p>Collect, analyze, and evaluate information through systematic observation and reasoning. Information is used to enhance the learning and growth of student and candidate alike.</p> <ul style="list-style-type: none"> Identify and improve efficacious pedagogical practices Enhance knowledge and understanding of curriculum Promote motivation and dispositions to learn Further the education profession 	<p>1.2 Reflect - Candidates reflect on educational practice.</p> <p>Assess and evaluate the possible physical, social, emotional, and intellectual effects on others and their self as a result of their choices.</p> <ul style="list-style-type: none"> Interpret behaviors, events, observations and emotions. Examine own motivations, perspectives, and possible biases. Delay judgment until reliable information is examined. Tolerate ambiguity and multiple possibilities. 	<p>Outcome 2. Learning and Growth in a caring community</p> <p>Teacher candidates plan, facilitate, and evaluate caring learning communities that facilitate learning and foster development in all learners.</p> <p>2.1 Plan - Candidates plan how to select, develop, and organize experiences to create and maintain caring communities that provide opportunities in a changing environment for students to develop with others quality relationships and intellectual ideas.</p> <p>Based on current research and wisdom of practice, anticipate learners' needs, select methodology and strategies that will motivate learners to set goals, establish priorities, and engage in sequences of learning experiences to achieve those goals.</p> <ul style="list-style-type: none"> Access and make effective use of research of best practice and wisdom of practice. Anticipate and speculate learners' current and future needs. Identify powerful landmarks in the landscape of learners' social, emotional, and intellectual needs. Develop scenarios to collaborate with learners to create a social and learning environment which meets their physical, social, emotional, and intellectual needs. Plan proactively to manage the classroom environment to facilitate learning as described in 2.2, 2.3, and 2.4. 	<p>2.2 Facilitate learning - Candidates assist learners in their planning, setting, and achieving goals to create productive learning in a caring community with the potential for being life long learners.</p> <p>Use methodology and strategies, based on current research and wisdom of practice, to challenge learners to set personal and group goals, priorities, and engage in sequences of learning experiences to achieve those goals.</p> <ul style="list-style-type: none"> Establish an intellectual, psychological, and physical environment that enable learners to act and react productively for their own and others' learning. Know what is happening in the classroom and handle most management proactively, but can intervene as necessary and redirect undesirable learner behavior in a caring and least restrictive manner while attending other matters simultaneously. Foster intrinsic motivation by using a variety of challenging activities that motivate and challenge all students to work to the utmost of their abilities. Model appropriate behaviors that are expected of learners and are consistent with behaviors related to learning. Create psychologically safe environments that encourage positive development of learner self-efficacy, encourages creative thought and behavior, and offers appropriate non-evaluative and nonjudgmental responses. Create a responsive classroom environment where learners actively seek significant ideas with depth, breadth, and rigor from a variety of sources that are appropriate for the learners, and consistent with state and national standards. 	<p>2.3 Evaluate learning - Candidates use information to select the best options to facilitate learning and development.</p> <p>Collect unbiased information to make value statements about the quality of learners' development and the power of the principled procedures to facilitate productive learning.</p> <ul style="list-style-type: none"> Collect data, reflect upon that data, and make reliable inferences with regards to facilitating learning and changing principled procedures as deemed necessary. Use data to improve teaching and learning within a caring community. Use feedback to help learners monitor their learning and share the responsibility for learning outcomes. 	<p>2.4 Create caring environments - Candidates create an environment that is safe and welcome for all who chose to participate.</p> <p>Create environments attending to the needs for belonging, being an active participant, developing a passion for life long learning, and a desire to participate in learning communities.</p> <ul style="list-style-type: none"> Invite learner and community participation to promote learning. Encourage and facilitate unbiased interactions. Make everyone feel they belong. Achieve intellectual, emotional, social, and physical growth. Foster curiosity. Challenge and motivate each other to engage in productive learning. 	<p>Outcome 3. Knowledge, skills, and dispositions</p> <p>Teacher candidates demonstrate an integration of knowledge, disciplined inquiry, skills, and dispositions in the subjects they teach.</p> <p>3.1 Knowledge Candidates are knowledgeable of the content and methods of inquiry in the subjects they teach. They strive for accuracy, comprehensive understanding, and assist others in valuing knowledge.</p> <p>Know and use the processes of inquiry in the subject and sufficient other content information to facilitate learning and maintain or increase their dispositional value for the subject.</p> <ul style="list-style-type: none"> Use the central, powerful, and unifying concepts within the structures of content. Accurately represent an idea, make multiple connections, generalize ideas, and facilitate transfer. Make knowledgeable decisions based on standards when planning, implementing and assessing curricula, and student growth. Know central concepts, assumptions, and processes and how to represent them across different developmental levels of understanding. Know and apply the tools of inquiry in different ways and how to represent them across different developmental levels of understanding. Relate knowledge to other subjects and how to represent it across different developmental levels of understanding. Connect concepts and generalizations between and among subject areas and real life. Interact in a manner that reflects the dynamic characteristics of subject matter knowledge. 	<p>3.2 Skill - Candidates possess the skills of the discipline required in their subjects.</p> <p>Identify and structure information in their subject area(s) for the purpose making sense of and creating meaning for the content.</p> <ul style="list-style-type: none"> Learn voraciously about subject matter in many ways. Use multiple representations and explanations of concepts and generalizations to facilitate the construction of ideas and the connection to prior knowledge. Evaluate resources and materials for comprehensiveness, accuracy and usefulness. 	<p>3.3 Disposition - Candidates possess the attitudes and dispositions that promote the desire to inquire and learn about those subjects.</p> <p>Display attitudes and dispositions that motivate others to participate, use and learn about the subject, and maintain or increase their dispositional value for the subject.</p> <ul style="list-style-type: none"> Realize that subject knowledge is not a fixed body of facts, but complex and ever evolving and how to represent this across different developmental levels of understanding. Recognize different "ways of knowing," differing viewpoints, theories, and methods of inquiry and how to represent these across different developmental levels of understanding. Model attitudes that are conducive to constructing knowledge in the subject area. 	<p>Outcome 4. Communication skill</p> <p>Teacher candidates have the ability, skill and desire to communicate with understanding.</p> <p>Communicate - Interact with others in a way that demonstrates they value other people. Make all participants feel comfortable with the process and confident that everyone is being understood.</p> <ul style="list-style-type: none"> Choose a mode and style of communication that is tacit and civil and reflective of the target group. Evaluate the effectiveness of communication. Use effectively and interpret skillfully verbal, nonverbal and media communication. Listen attentively and actively to learners, parents, and colleagues. Use effective questioning strategies to facilitate learning and development. Aware of and appreciate diversity in the use of language and other forms of communication. Use technology to communicate with learners, parents and colleagues. 	<p>Outcome 5. Professionalism</p> <p>Teacher candidates possess and demonstrate the values, demeanor, and reflective decision-making of a professional educator.</p> <p>Professionalism - Candidates welcome everyone into the group with skillful interactions that develop feelings of belonging, motivate them to participate with others and with the group, achieve worthwhile productive goals, and conclude with a desire for continual meaningful participation.</p> <ul style="list-style-type: none"> Have a passion for learning. Speak and act with integrity. Demonstrate open-mindedness of diverse points of view Speak and act with the well-being of children, schools, and the stewardship of the education profession in mind. Persist in the development as a professional educator Speak and act in ways that demonstrate fairness and justice. Demonstrate self-control and emotional serenity inside and outside the classroom. Demonstrate loyalty to self, others, the school, the community and the profession.
<p>Field Endorsement in Natural Sciences (BA or BS) 66 hours</p> <p>Natural Science Field endorsement students must complete MAT 137 Applied Calculus (3) or its equivalent to satisfy the Mathematics Gen Ed requirements)</p> <p>Completion of a total of 66 hours of Biology, Chemistry, Earth Sciences, Physics to include:</p> <p>BIO:110 Biology Concepts 4 200 Zoology 4 Biology Laboratory Tech 1 CHE: 106 General Chemistry I 4 107 General Chemistry II 4 Laboratory Techniques 1 EAS: 110 Introduction to Meteorology 4 120 Introduction to Geology4</p> <p>PHY:201 General Physics I 3 202 General Physics II 3 Physics Laboratory I 1 Physics Laboratory II 1 393 Physics Laboratory Tech 1</p> <p>BIO, CHE, EAS, NAT, PHY electives to combine with the above to total at least 18 hours in one area, 15 hours each in 2 other areas, and 12 hours in the 4th area - 25</p> <p>BIO, CHE, EAS, NAT, PHY upper level electives - 6</p> <p>EDU: 409 Science Content Area Methods & Materials is required. No additional endorsement is required for a Nebraska Teaching Certificate.</p> <p>7-12 Secondary Professional Education Courses: 34-38 hours</p> <p>EDU: 201 Intro to Professional Education 3 211 Child & Adol Growth & Dev 3 310 Read & Write in the Mid/Sec Sch 1 Or ENG 444 Dev Rdg-middle/Sec Sch 3 321 Ed Psych: Models & Theories Of Learning 3 322 Secondary Education Practicum 1 323 Content Area Practicum 1 367 Human Relations 3 Secondary Schools 2 Content Area Meth & Mat 2-4 (music majors refer to endorsement requirements) 410 Student Teaching & Seminar for the Secondary School 12 SPD: 151 Introduction to Special Education 3</p> <p>General Education Courses (46 hours)</p> <p>Graduation requirement minimum (125 hours)</p>										
