BOARD OF REGENTS
AGENDA ITEM SUMMARY

Academic Affairs **August 14, 2025**

AGENDA ITEM: Proposal to establish a Science 7-12 Teaching Endorsement for the Bachelor of Science in Education degree to be administered by the Department of Physics and Astronomy in the College of Arts and Sciences at the University of Nebraska at Kearney (UNK).

☐ **Review** ☒ **Review + Action** ☐ **Action** ☐ **Discussion**

☐ *This is a report required by Regents' Policy.*

PRESENTERS: David S. Jackson, Interim Provost

PURPOSE & KEY POINTS

Currently there is a shortage of science teachers in Nebraska. This endorsement allows graduates to teach grades 7-12 Biology, Chemistry, Earth and Space Science, and Physics. This field endorsement is approved by the Nebraska Department of Education and will allow future science teachers greater flexibility to teach all natural science courses, and therefore better fill Nebraska's teacher workforce needs.

BACKGROUND INFORMATION

Section 2.9 of the Bylaws of the Board of Regents provides that, "No curriculum leading to a degree or certificate shall be adopted…without the approval of the Board."

RECOMMENDATION

The President recommends approval.

SUMMARY-ESTABLISHING A NEW ACADEMIC PROGRAM

CAMPUS AND NAME OF PROGRAM: UNK Bachelor of Science in Education, 7-12 Science Teaching Endorsement

Proposed Date of First Offering: Fall 2025

New/Additional Annual Program Costs	Program Management		Brief Explanation
	FTE	Expense	
Faculty*	0	$ -	Currently there is a shortage of science teachers in Nebraska. This endorsement allows graduates to teach 7-12 Biology, Chemistry, Earth and Space Science, and Physics. All courses are currently existing and have capacity, therefore, no additional resources are needed.
Staff*	0	$ -	
Additional Expenses**		$ -	
Total Annual Expense		$ -	

*Total salary and benefits at year 5; **Additional costs on an annualized basis estimated for Year 5

AAU Recognition Potential Impact: [ ]Very Negative [ ]Negative [ ]None [ ]Positive [ ]Very Positive [X]Not Applicable

AAU Recognition Criterion Impacted (If any):

Minimum Estimated Program Enrollment (Year 5)

	Enrollment	Credit Hours	Tuition Rate	Income
Resident Tuition*	7	31	$ 277.00	$ 60,109
Non-Resident Tuition**				$ -
Special/Other Tuition***				$ -
			Total Income	$ 60,109
			Net Income	$ 60,109

*calculated income based on an estimated tuition rate of $_277___ per CH; _31___ CH per year per student.

**calculated income based on an estimated tuition rate of $____ per CH; ____ CH per year per student.

***calculated income based on an estimated tuition rate of $____ per CH; ____ CH per year per student.

OFFICE OF THE CHANCELLOR

April 1, 2025

Jeffrey P. Gold, M.D.
President
University of Nebraska
Varner Hall, 3835 Holdrege Street
Lincoln, NE 68583
jeffrey.gold@nebraska.edu

RE: Proposed University of Nebraska at Kearney Bachelor of Science in Education, Science 7-12 Teaching Subject Endorsement

Dear President Gold:

I am pleased to support the proposed Science 7-12 Teaching Subject Endorsement, Bachelor of Science in Education degree at UNK. This program plays a vital role in addressing Nebraska's urgent need for qualified science teachers, especially in rural communities. By preparing educators to teach Biology, Chemistry, Earth and Space Science, and Physics, it equips them with the skills necessary to meet the evolving demands of secondary education.

The endorsement aligns with UNK's commitment to teacher preparation and the Comprehensive Statewide Plan for Postsecondary Education by consolidating single-subject science education degrees into a more flexible and comprehensive program. This initiative is designed to increase the number of science teachers while streamlining their path to certification.

The program will also integrate engineering concepts into rural science education, enhance instructional strategies, and promote inquiry-based, standard-aligned curriculum. It is a cost-effective solution that leverages existing resources without requiring additional infrastructure. I commend UNK's dedication to advancing science education, and fully support approval of this proposed degree.

Sincerely,

Charles J. Bicak, Interim Chancellor

tlp

University of Nebraska Kearney
Office of the Chancellor
2504 9th Avenue, Warner Hall 1000 | Kearney, NE 68849 | 308.865.8208 | fax 308.865.8665
unk.edu

DATE: March 31, 2025

TO: Charlie Bicak
Interim Chancellor

FROM: Julie Shaffer
Senior Vice Chancellor for Academic Affairs

SUBJECT: Proposed University of Nebraska at Kearney Bachelor of Science in Education, Science 7-12 Teaching Subject Endorsement

I am pleased to offer my support for the proposed Science 7-12 Teaching Subject Endorsement, Bachelor of Science in Education at the University of Nebraska at Kearney (UNK). This program is a crucial step in addressing Nebraska's statewide shortage of qualified science teachers, as identified in the 2023 Teacher Shortage Survey by the Nebraska Department of Education and by preparing educators to teach Biology, Chemistry, Earth and Space Science, and Physics, this endorsement ensures that graduates will be equipped to meet the diverse and growing needs of Nebraska's secondary schools—particularly in rural areas where schools often require teachers with expertise across multiple science disciplines.

The 7-12 Science Field Endorsement aligns with UNK's long-standing commitment to teacher preparation and supports the Comprehensive Statewide Plan for Postsecondary Education. This program has been strategically designed to consolidate existing subject-specific endorsements into a more flexible and comprehensive degree, ultimately increasing the number of science teachers produced. Given the historically low completion rates for single-subject science education degrees, this initiative will streamline the pathway for aspiring teachers while ensuring they receive a well-rounded education. If approved, this new endorsement will replace our current single-subject science education degrees, combining them under this program.

Additionally, this degree will provide new opportunities for integrating engineering concepts into rural science education, enhancing instructional strategies and preparing teachers to engage students in inquiry-based, standard-aligned science curriculum. Leveraging existing faculty and resources, this endorsement will be cost-effective, requiring no additional infrastructure, while significantly strengthening UNK's ability to support Nebraska's educational system.

I fully support this proposal and commend UNK's dedication to advancing science education across Nebraska. Both Deans and Department Chairs from Biology, Chemistry, Physics & Astronomy, and Teacher Education have expressed their support for this initiative, recognizing its importance in meeting the urgent demand for highly qualified science educators.

With your approval, we will submit this proposal to the University of Nebraska Council of Academic Officers.

If you should need additional information, please let me know. Thank you.

JJS/tlp

University of Nebraska Kearney
Office of the Senior Vice Chancellor for Academic Affairs
2504 9th Avenue, Warner Hall 1000 | Kearney, NE 68849-1205 | 308.865.8209 | fax 308.865.8665
unk.edu

University of Nebraska
Proposal for New Undergraduate Major or Degree

I. Descriptive Information

Name of Campus Proposing New Major or Degree	
University of Nebraska at Kearney	
Full Name of Proposed Major or Degree	
Science 7-12 Teaching Subject Endorsement, Bachelor of Science in Education	
Degree to be Awarded to Graduates	
Science 7-12 Teaching Subject Endorsement, Bachelor of Science in Education	
Other Programs (including Certificates, Majors, or Degrees) Offered in this field by this institution	
Biology 7-12 Teaching Endorsement, Chemistry 7-12 Teaching Endorsement, Physics 7-12 Teaching Endorsement	
CIP Code: 6 digit *[Browse here: http://nces.ed.gov/ipeds/cipcode/Default.aspx?y=55]*	
40.0801	
Subject Code	
SCIENCE7-12	
Administrative Unit(s) for the Major or Degree	
Department of Physics and Astronomy	
Proposed Delivery Site	
University of Nebraska at Kearney	
Students can Complete the Full Program *[check all that apply]*	
_X_On-campus __Online (asynchronous) __ Synchronous Distance __Hybrid/Blended of Selected	
Program leads to professional licensure or certification	
__X__ no _____ yes If yes, complete Appendix: Professional Licensure and Certification.	
Curriculum Categories and Number of Credit Hours (Total = 120_)	
Existing or repackaged curricula:	_120_ credit hours
Revised or redesigned curricula:	__0__ credit hours
New curricula:	__0__ credit hours
Proposed Date the New Major or Degree will be Initiated	
[term/year] Fall 2025	

II. Details

A. Purpose of the Proposed Major or Degree:

Students graduating with a 7-12 Science Field Endorsement will be able to teach 7-12 Biology, Chemistry, Earth and Space Science, and Physics. This field endorsement is approved by the Nebraska Department of Education and is currently offered at all other Nebraska colleges and universities. Currently, there is a shortage of science teachers in Nebraska (2023 Teacher Shortage Survey by the NDE) and this endorsement will allow future science teachers greater flexibility to teach all natural science courses (biology, chemistry, earth & space science, physics, science). Furthermore, the courses listed in this endorsement were selected by the biology, chemistry, and physics departments at UNK in accordance with the Rule 24 Matrix and the required content for each of the individual subjects ensuring that students graduating with this endorsement will have the needed background to teach each of the included subject area. This program utilizes courses that are already taught at UNK and will require no additional resources in terms of faculty, facilities, or equipment.

B. Description of the Proposed Major or Degree:

The proposed program is a 120 credit hours Bachelor of Science in Education (BSED) degree designed to prepare future educators to teach Biology, Chemistry, Physical Science, and Physics at the secondary level. The program provides a strong foundation in the core sciences while equipping students with the necessary pedagogical skills to effectively teach in diverse classroom settings.

Students will complete coursework in biology, chemistry, physics, and physical science, ensuring they meet the qualifications to teach multiple science subjects. The program is structured to align with state and national standards for secondary science educators. Students will work closely with their academic advisors to develop a program of study that integrates science coursework with required education courses. Graduates will be well-prepared to enter the teaching profession and may also pursue further certification or graduate studies in science education.

C. Student Learning Outcomes

Graduates of secondary education/science will be able to:

1. Make science content accessible to grades 7-12 students, thus demonstrating their subject matter knowledge of major scientific concepts, principles, theories, laws, and their interrelationships.
2. Create, implement, and assess inquiry-based curriculum opportunities in which grades 7-12 students use scientific practices (e.g., collect and interpret data) in order to develop and communicate concepts and understand scientific processes, relationships, and natural patterns from empirical experiences.
3. Construct curriculum that is consistent with the goals and recommendations of state and/or national science education standards that includes the nature of science, inquiry, and the social context of science.
4. Collect, organize, analyze, and reflect upon diagnostic, formative, and summative evidence of learning; develop and use effective assessment strategies that are fair and equitable to measure student learning.
5. Create and maintain a safe, respectful, and productive learning environment that reflects a scientific classroom discourse community.
6. Use a variety of inquiry approaches with appropriate use of technology that enhances learning.

7. Deliver cognitively challenging and appropriate instruction that respects diverse students' needs (e.g., ELLs, students with special needs).

D. Admissions

UNK students who are pursuing a program/degree that leads to initial teacher certification will begin the application process for admission to the Teacher Education Program during the semester that they complete Teacher Education 100 (TE 100). Transfer students who have taken the equivalent of TE 100 elsewhere will apply during Transfer Day or their first semester at UNK. The Application for Admission Form is available in the Educator Certification Office located in the College of Education Building C-128 and the phone number is (308) 865-8937.

E. Program Curriculum

List specific required or elective courses in the major or degree. List prerequisites for required courses only. Note any courses that have course/lab fee; indicate if approved or planned. If courses listed are under development or modification, please note accordingly. Add lines as necessary.

Required Courses: Course Code and Title	Major/Degree Credit Hours	Prerequisites, if applicable	Course and Lab Fee	New or Existing Course
ENG 101 Introduction to Academic Writing	3			Existing
SPCH 100 Fundamentals of Speech Communicatio n	3			Existing
MATH 102 College Algebra	3	MATH 101 or Math ACT Score of 20 or greater and two years of high school algebra Students may not enroll in MATH 102 after earning credit for MATH 115 or MATH 123.		Existing
PSCI 110 Introduction to American Politics	3			Existing
PHYS 205 General Physics I	4	MATH 102 with a grade of B+ or above or MATH 103 with a grade of B+ or above or MATH 115 or Math ACT score of 20 or above. Corequisite: PHYS 205L.		Existing
PHYS 205L Physics I Laboratory	1	Corequisite: PHYS 205.	$15	Existing

TE 100 Teaching in a Democratic Society	3			Existing
ENG 102 Special Topics in Academic Writing and Research	3			Existing
TE Professional Sequence				
TE 204 – Growth & Development/ Introduction to Exceptionalities	4	Prerequisite: Sophomore standing or above		Existing
TE 206 - Instructional Technology and the Preservice Teacher	3			Existing
TE 306 Reading and Inclusion in K-12 Classrooms	2	Prerequisite: Admission to Teacher Education		Existing
TE 319 Management and Assessment in K-12/Secondary Classrooms	2	Prerequisite: Admission to Teacher Education. Corequisite: TE 320 or ART 371 or MUS 356 or MUS 467 or PE 471.		Existing
TE 320 Field Experience in Secondary Classroom	2	Prerequisite: Admission to Teacher Education. Corequisite: TE 319.		Existing
TE 400 Student Teaching	12			Existing
BIOL 105 Biology I	4		$35	Existing

BIOL 106 Biology II	4		$36	Existing
BIOL 305 Biostatistics	3	Prerequisite: MATH 101 or above or MATH ACT score of 20 or above.		Existing
BIOL 307 Ecology	3	Prerequisite: BIOL 105 and BIOL 305. Additional Course Fee Required		Existing
BIOL 359 Evolution	3	Prerequisite: BIOL 105 and BIOL 305. Additional Course Fee Required	$62	Existing
CHEM 160 General Chemistry	3	Prerequisite: MATH 102 or MATH 103 or MATH 115 or Math ACT score of 22 or above or permission of instructor. Corequisite: CHEM 160L.		Existing
CHEM 160L General Chemistry Lab	1	Corequisite: CHEM 160.	$30	Existing
CHEM 161 General Chemistry	3	Prerequisite: Grade of C or above in CHEM 160 and CHEM 160L or advanced placement. Corequisite: CHEM 161L.		Existing
CHEM 161L General Chemistry Lab	1	Corequisite: CHEM 161.	$30	Existing
CHEM 169 Chemistry Foundations and Careers	1	Prerequisite: 4 hours of Chemistry		Existing
CHEM 301 Analytical Chemistry	3	Prerequisite: Grade of C or above in CHEM 161 and CHEM 161L		Existing
CHEM 301L Analytical Chemistry Lab	1	Corequisite: CHEM 301.	$45	Existing
CHEM 310 Safety in Chemistry	1	Prerequisite: Grade of C or above in CHEM 161 and CHEM 161L Corequisite: CHEM 250 or CHEM 360 or CHEM 310.		Existing
PHYS 201 Earth Science	4		$15	Existing
PHYS 206 General Physics II	4	Prerequisite: PHYS 205 and PHYS 205L.		Existing

PHYS 206L Physics Laboratory II	1	Corequisite: PHYS 206.	$15	Existing
PHYS 210 Astronomy	3	Prerequisite: MATH 102 or higher		Existing
PHYS 301 Advanced Physical Science	4		$15	Existing
CSP 417 Counseling Skills	0-3			Existing
Take Either BIOL 471 Methods in Secondary Science Teaching Or PHYS 471 Methods in Secondary Science Teaching	3	Prerequisite: Admission to Teacher Education Enrollment in PHYS 471 is not allowed if BIOL 471 has been completed.		Existing
Electives: Course Code and Title	Major/Degree Credit Hours			
LOPER 1	3			Existing
LOPER 5	3			Existing
LOPER 6	3			Existing
Unrestricted Electives	11-14			Existing
Total	120		$298	

Four-Year Plan of Study	Course Codes and Titles	Credit Hours	Fulfill Gen Ed, ACE, LOPER Y/N
Term 1	LOPER 1 TE 100 MATH 102 BIOL 105	3 3 3 4	Y Y Y

	CHEM 160/160L	4	
Term 2	BIOL 106	4	
	CHEM 161/161L	4	
	ENG 101	3	Y
	CHEM 169	1	
	PSCI 110	3	Y
Term 3	TE 204	4	
	CHEM 301/301L	4	
	SPCH 100	3	Y
	BIOL 305	3	
	LOPER 5	3	Y
Term 4	PHYS 210	3	
	BIOL 307	3	
	TE 206	3	
	PHYS 201	4	
	ENG 102	3	
	CHEM 310	1	
Term 5	PHYS 205/205L	5	Y
	TE 306	2	
	BIOL 359	3	
	TE 319	2	
	LOPER 6	3	Y
Term 6	PHYS 206/206L	5	
	TE 320	2	
	Unrestricted Elective	1	
	Unrestricted Elective	3	
	Unrestricted Elective	3	
Term 7	TE 400	12	
Term 8	BIOL 471 or PHYS 471	3	
	Unrestricted Elective or CSP 417	3	
	PHYS 301	4	
	Unrestricted Elective	3	

F. Advising

When students declare in this major they will be assigned an advisor in Teacher Education, and one advisor in the Department of Physics and Astronomy to advise on content.

G. Evaluation of Program

This endorsement will be evaluated by Teacher Education in coordination with faculty in each of the respective departments (Biology, Chemistry, and Physics). We will complete university-required program assessment concurrent with the portion of the annual assessment of the program that focuses specifically on content courses.

H. Plan for Implementation

No new subject codes will need to be created, modified, or delete for this program. We expect that our existing PHYS 7-12, CHEM 7-12, and BIOL 7-12 endorsements will be phased out with this new program. This program will rely on existing partnerships with Teacher Education to allow students to complete practical experiences in the classroom.

I. Other Information (as applicable)

III. Review Criteria

A. Centrality to the Campus Role and Mission

UNK has long been associated with training teachers and the addition of the 7-12 Science Field Endorsement will add to our ability to train teachers at UNK. While duplication across the NU system can lead to competition between campuses, the training of future teachers in an endorsement offered by the Nebraska Department of Education will not infringe upon the other NU campuses program offering.

B. Relationship of the proposal to the University of Nebraska strategic priorities

This program would expand the educational opportunities for students across Nebraska. Building a stronger K-12 education system aligns with the following "Odyssey to Extraordinary" pillars and goals.

- Extraordinary Culture and Environment - Partnerships Across Nebraska.
- Extraordinary Teaching and Learning - Inspiring All future Learners goal.

C. Consistency with the Comprehensive Statewide Plan for Post-Secondary Education

According to the CCPE Statewide plan, UNK's primary emphasis is undergraduate programs leading to baccalaureate degrees in arts and sciences, business, teacher education, and allied health. Since this would add to UNK's ability to offer degrees in teacher education, this endorsement is consistent with the CCPE plan. In addition, the most recent Teacher Shortage Survey conducted by the Nebraska Department of Education in 2023 indicated there is a teacher shortage in Sciences (Includes: Biology, Chemistry, Earth & Space Science, Physics, Science). As this endorsement would allow for teaching all these subjects, this new endorsement at UNK would be able to help address the teacher shortage by allowing graduates to teach all of these subjects and not limiting them to a single subject or subset of these subjects. As is, students wanting to teach 7-12 science at UNK are forced to choose a single subject or take enough additional courses needed to obtain a second science endorsement which often may require an additional year of courses making this an undesirable option and potentially causing students to pursue other careers which require less schooling.

D. Evidence of Need and Demand

Need: The Nebraska department of education has data to suggest there is a deficit of teachers with Science qualifications here: Teacher Shortage Survey – Nebraska Department of Education

Demand: Prior to the elimination of the 7-12 Physical Science Field Endorsement, the number of students majoring in the degree averaged 10.25 students per year (2010-2013 data). Since the 7-12 Science Field endorsement includes the subjects covered in the 7-12 Physical Science Field endorsement as well as biological sciences, this degree will be very appealing to our students and give them greater flexibility in the classes they could teach. Over the past 5 years (2019-2023 data), UNK

has averaged a combined 15.2 students majoring in 7-12 BSED subject endorsements (biology, chemistry, and physics – UNK Factbook) and many of these students would appreciate being able to teach all science courses by getting a 7-12 Science Field endorsement. Furthermore, UNK is the only 4-year college/university in the state that does not currently have this endorsement. A versatile general science endorsement provides an opportunity to fill science education roles in small and rural schools throughout the state.

In 2021-2022, there were 26 teachers in the transitional teacher program pursuing Science endorsements. As it currently stands, these students can have the absolute minimum state requirements and get certified since UNK does not have an official Science Endorsement. By creating a multi-department approved 7-12 Science Field endorsement at UNK we would ensure that our students are truly prepared to teach biology, chemistry, physics and physical science as the content area classes have been specified and have been vetted to ensure coverage of the content specified in the NDE Rule 24 matrix.

E. Avoidance of Unnecessary Duplication

The most recent Nebraska Teacher Shortage Report states that Science endorsements have been a designated shortage area each year for the last 15 years. By providing an endorsement that qualifies the student to teach in any of the sciences more of these positions may be filled. The current demand for students with this endorsement is not being met. Adding additional opportunities for students to complete this endorsement will aid in addressing this need in the state. This also aligns with UNK's mission to train future teachers.

F. Adequacy of Resources:

1. Faculty/Staff

   No new faculty will be needed to launch this program.

2. Library/Information Resources

   No new library resources will be needed for this program.

3. Physical Facilities and Equipment

   No new facilities or equipment will be needed for this program.

4. Budget Projections [include Table 1 and Table 2]

TABLE 1: PROJECTED EXPENSES												
CAMPUS AND NAME OF PROGRAM, CENTER, OR UNIT:												
UNK 7-12 Science Education Endorsement	(FY 2025) Year 1		(FY 2026) Year 2		(FY 2027) Year 3		(FY 2028) Year 4		(FY 2029) Year 5		**Total Cost**	
Personnel	FTE	Cost	FTE	Cost	FTE	Cost	FTE	Cost	FTE	Cost		
	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Subtotal		$0		$0		$0		$0		$0		$0
Operating												
		$0		$0		$0		$0		$0		$0
Subtotal		$0		$0		$0		$0		$0		$0
Total Expenses		$0.00		$0.00		$0.00		$0.00		$0.00		**$0.00**

* For use only if all expenses are zero. Must be explained in narrative document.

TABLE 2: REVENUE SOURCES						
CAMPUS AND NAME OF PROGRAM, CENTER, OR UNIT:						
UNK 7-12 Science Education Endorsement	FY(2025) Year 1	FY(2026) Year 2	FY(2027) Year 3	FY(2028) Year 4	FY(2029) Year 5	**Total**
Existing Funds [1]	$0	0	0	0	0	$0
Required New Public Funds [2]	$0	0	0	0	0	$0
1. State Funds	$0	0	0	0	0	$0
2. Local Tax Funds (community colleges)	$0	0	0	0	0	$0
Tuition and Fees [3]	$8,264	$17,174	$34,348	$42,935	$60,109	$162,830
Other Funding	$0	$0	$0	$0	$0	$0
1						$0
2						$0
3						$0
Total Revenue	$8,264	$17,174	$34,348	$42,935	$60,109	$162,830

[1] Courses in this program are already being offered for other programs on campus.

[2] No additional funding is required.

[3] Tuitition and fees taken from Budget Table 3.