

TLSC 455-002

Secondary Content Methods:

Curriculum, Instruction and Assessment in Secondary Science

Course Overview

This 6-credit course content-area methods course focuses on three primary areas: curriculum design instruction, and assessment. Teacher candidates:

- further develop their understanding and application of designing, implementing and assessing instruction in an area of specialization.
- utilize UbD as a framework for planning instruction, alongside content-specific frameworks (i.e. *A Framework for K-12 Science Education; Effective Science Teaching for English Language Learners Framework*)
- focus on accessing and incorporating students' prior knowledge and experiences, interests, and identities, including students' primary language, within instructional plans and decision-making.
- consider the language (i.e., listening and speaking) and literacy (i.e., reading and writing) domains, demands and functions relevant to their content area and aligned to the unit's enduring understandings, goals and objectives
- use information about students' language assets and needs when designing instructional tasks
- develop content area unit and assessment plans that address academic language features and
- develop content area unit and assessment plans that integrate content area language and literacy strategies
- develop content area unit and assessment plans that allow students to use technology to support and deepen their content-area learning.
- write objectives and design test questions to effectively measure those objectives.
- learn about the design of summative and formative assessments, as well as the various issues regarding assessment design and implementation that can lead to invalid and unreliable data for diverse students.
- use a variety of qualitative and quantitative measures to display and analyze pretest, mid-stream, and posttest performance and disaggregate the data by various student characteristics.
- use the data to inform instructional decisions and modifications, including for bilingual students and ELs.
- learn to select and develop assessments that assess content outlined in objectives, rather than test language proficiency or mainstream cultural norms.
- analyze and modify instructional tasks and assessments for cultural and linguistic bias and language level/load.

As part of this course, candidates have a clinical requirement to spend 7 hours (split over the course of 1 or 2 days) in a partner classroom. The clinical placement is designed to align and complement coursework. Candidates observe, practice, analyze and reflect on:

- assessment tools and techniques and the extent to which they are valid and reliable for diverse learners, including ELs, and appropriately accommodate for diverse student needs, including ELs' language proficiency levels
- how reading, writing, listening, speaking, and viewing is included and integrated in instruction of content
- how instruction is differentiated using suggested strategies in the UDL guidelines checklist

- how instruction scaffolds and supports students as they understand, develop, and use language demands

Essential Questions:

- How does backward design facilitate deep learning of content, skills and practices?
- How do students most effectively acquire skills and practices within a specific content area? How can the use of data facilitate students' acquisition of content, skills and practices?
- How can students utilize technology to support and deepen their learning in a particular content area?
- How do teachers apply understandings of social and academic language to support English Learners (ELs) in their acquisition of English language and literacy across the content areas?
- How do teachers promote authentic disciplinary language and literacy tasks to support content area learning and development?
- How do students use their language and literacy skills to acquire and demonstrate knowledge, understanding, skills and practices within a content area?
- How do students become actively engaged in learning and self-assessment? How can summative and formative assessment be used to provide individual feedback regarding student progress and achievement?
- How are learning objectives, assessments, data collection, data analysis, and educational decisions related?
- How can teachers use data to effectively design, adjust and modify instruction for the individual classroom and school?
- How do teachers take into consideration contextual components and aspects of student diversity when collecting and analyzing data and formulating achievement plans?
- How can students' prior knowledge, experiences, personal, home and community understandings be accessed and incorporated in classroom instruction?
- What is the impact and influence of race and racism on education within the content areas?

As a part of this course, candidates will understand that effective educators:

- Apply deep understanding of content, pedagogy, research and evidence based practices to design instruction that included the alignment of goals, objectives, assessments and instructional strategies to meet the individual needs of all students.
- Hold high expectations and build on the assets of diverse students (including, but not limited to race, ethnicity, culture, language, SES, immigration status, exceptionality, ability, sexual orientation, gender, and gender identity).
- Use data to drive instruction and assess teaching and learning effectiveness.
- Explicitly integrate the teaching of reading, writing, communication and technology across content areas.
- Reflect and carry out the School of Education's mission of professionalism in service of social justice in the school and the community by promoting human rights, reducing inequalities, and increasing the empowerment of society's most vulnerable groups.
- Apply knowledge of policy and local, state, and national educational contexts to advocate with and for students and families.

- Develop language to engage in discussions of race and racism, develop anti-racist curriculum and race-visible pedagogies.
- Create and support safe and healthy learning environments for all students.

As a part of this module, candidates will:

- Incorporate research and evidence based practices into the design of instruction (e.g.
 - o UbD, SIOP, and UDL). (5S;9A)
- Use standards based curriculum maps (e.g. UbD) to design units and lessons to meet the needs of diverse learners. (3Q;3I)
- Design a standards based instructional unit that uses backward design (e.g. UbD) to align objectives and assessments and instructional practices based on high expectations for each students' learning and behavior. (3H; 3I)
- Select relevant instructional content, materials, resources and strategies for differentiated and universally designed instruction. (3Q;50)
- Use assessment strategies and devices that are non-discriminatory, and take into consideration the impact of disabilities, methods of communication, cultural background, and primary language on measuring knowledge and performance of students. (7R)
 - Use data to differentiate assessments to meet the needs of diverse learners. (1H;3J;5P)
 - Monitors and adjusts strategies in response to qualitative feedback from students and student performance. (3M;5J;5P)
- Analyze and use student information to design instruction that meets the diverse needs of students and leads to ongoing growth and achievement. (1H)
- Use data to plan for differentiated instruction to allow for variations in individual learning needs. (3J)
- Make data driven decisions using assessment results to adjust practices to meet the needs of each student (5P)

English as a Second Language (ESL) Endorsement

By participating in TLLSC, all candidates complete the coursework and clinical hours to be eligible for ESL endorsements. The pertinent understandings, knowledge, and skills for teaching English learners (ELs) are targeted and integrated throughout the field-based program. In line with Part 27.425 of the Illinois Administrative Code, this module addresses the following standards to build candidates' expertise for teaching ELs.

1.A Language as a System – The competent ESL teacher:

- i) demonstrates an understanding of social and academic language to support English Learners (ELs) in their acquisition of English language and literacy across the content areas.
- ii) demonstrates understanding of language as a system, including phonology, morphology, semantics, syntax, discourse and pragmatics.

3.B Implementing and Managing Standards-based ESL and Content: The competent ESL teacher:

3.A Planning for Standards-based ESL and Content Instruction

- i) demonstrates knowledge of and applies concepts, research and best practices to plan classroom instruction in a supportive learning environment for ELs.
- ii) demonstrates understanding of diverse international approaches to teaching language and content.
- iii) plans age appropriate instruction for classrooms with students of various language proficiency levels and diverse cultural and academic backgrounds.
- iv) utilizes appropriate pedagogy to plan instruction for students.
- v) demonstrates how to access and incorporate students' prior knowledge and experiences, including students' primary language, for instructional purposes.

i) Implements a variety of second language teaching strategies and approaches (guided by national and State ESL language learning standards) for developing and integrating academic English language in the listening, speaking, reading and writing domains.

ii) Understands and provides access to the core curriculum, including through the use of the student's primary language.

3.C Using Resources Effectively in ESL Instruction – The competent ESL teacher:

i) Evaluates, selects and adapts a wide range of materials, resources and technologies that meet the content and language needs of ELs.

ii) Uses materials, methods and approaches that are culturally responsive, linguistically and academically rigorous, and developmentally appropriate, including the use of primary language resources.

4.C Content Subject and Classroom-based Assessments – The competent ESL teacher demonstrates knowledge, understanding and application of a variety of assessment tools and techniques that are valid and reliable for ELs in order to measure students' academic achievement, including accommodations for ELs' language proficiency levels, and inform teachers' content and language instruction in the classroom.

Conceptual Framework and Conceptual Framework Standards

The Loyola School of Education Conceptual Framework states that: Our mission is social justice, but our responsibility is social action through education. The following Conceptual Framework Standards (CFS) are assessed in this course:

- CFS1: Candidates critically evaluate current bodies of knowledge in their field.
- CFS2: Candidates apply culturally responsive practices that engage diverse communities.

This course module focuses on current bodies of knowledge in the field of Science Education. Candidates must demonstrate understanding of A Framework for K-12 Science Education and the Next Generation Science Standards, as well as current literature. They will also critically evaluate curriculum, instructional and assessment practices in a variety of diverse classroom and community settings, with a focus on equity.

Dispositions Assessment

All students are assessed on one or more dispositional areas of growth across our programs:

Professionalism, Inquiry, and Social Justice. The instructor in your course will identify the dispositions assessed in this course and you can find the rubrics related to these dispositions in LiveText. Disposition data is reviewed by program faculty on a regular basis. This allows faculty to work with students to develop throughout their program and address any issues as they arise.

Dispositions Assessed in this Course (Rubrics for these are on LiveText)

- **D1:** Demonstrating professionalism through personal responsibility and accountability related to attendance, participation and communication.
- **D2:** Demonstrating that teaching is a complex practice with inherently political and ethical implications
- **D3:** Valuing diversity and advocating for all students, particularly those from populations that are historically disenfranchised, underserved and/or overrepresented (including, but not limited to race, ethnicity, culture, language, SES, immigration status, exceptionality, ability, sexual orientation, language, SES, immigration status, exceptionality, ability, sexual

- orientation, gender, gender identity).
- **D4:** demonstrating professionalism and reflective practice in collaborating with teachers, students, administrators, families, and communities to improve achievement for all students.
 - **D5:** Participating in ongoing professional development, reading, and research in order to deepen their knowledge and expand their repertoire of skills
 - **D6:** collecting and analyzing community, school, family, and student data to guide educational decision making.
 - **D7:** valuing and utilizing the unique identities and backgrounds of all students, families and communities as essential assets in learning environments.
 - **D8:** demonstrating how one's beliefs about diverse learners impact teaching and learning and reflecting upon how one's actions affect others by demonstrating respect, fair-mindedness, empathy, and ethical behavior toward all learners, including respect for students' right to privacy.
 - **D11:** Implementing proactive and preventive practices that represents an understanding that student behavior is shaped by complex environmental factors
 - **D12:** demonstrating that his/her personal and professional expectations and capacities influence the motivation, positive learning results and achievement of students.
 - **D14** demonstrating resiliency when confronted with challenges and seeking the support of colleagues and others when needed.

LiveText

All students, except those who are non-degree, must have access to LiveText to complete the benchmark assessments aligned to the Conceptual Framework Standards and all other accreditation, school-wide and/or program-wide related assessments. You can access more information on LiveText here:

<https://www.luc.edu/education/studentlife/resources/course-management-fee/>

Required Texts

- Please bookmark and download a free copy of A Framework for K-12 Science Education here:
<https://www.nap.edu/catalog/13165/a-framework-for-k-12-science-education-practices-crosscutting-concepts>
- Windschitl, M., Thompson, J. J., & Braaten, M. L. (2018). *Ambitious science teaching*. Harvard Education Press.
- Brown, B. A. (2019). *Science in the city: Culturally relevant STEM education*. Harvard Education Press.

Recommended Texts

- Hougen, M. (2015). *Fundamentals of literacy instruction and assessment, 6-12*. Paul H. Brookes Publishing Co.
- Heineke, A., & McTighe, J. (2018). *Using understanding by design in the culturally and linguistically diverse classroom*. ASCD.

Course Assignments

Curricular Unit Review – 20% of Final Grade

Candidates evaluate a curricular plan using a screener tool. Candidates rationalize their ratings using specific evidence from the overall unit and specific lessons. Attention is paid to content-specific criteria as well as more general elements such as content area and language goals and objectives, supports and scaffolds for language and literacy, opportunities for authentic content area discourse, assessment tools and techniques, rigorous, relevant and appropriate learning progressions, differentiation opportunities and strategies.

Content Specific, Standards-Aligned Curriculum Unit & Rationale – 20% of Final Grade

Candidates develop a content specific standards-aligned curriculum unit according to accreditation requirements for the content area and the Illinois state ESL endorsement.

Assessment Plan & Rationale – 20% of Final Grade

Candidates develop a content specific standards-aligned assessment plan according to accreditation requirements for the content area and the Illinois state ESL endorsement.

Clinical Observations – 10% of Final Grade

Candidates spend 7 hours (split over the course of 1 or 2 days) in a partner classroom. Candidates complete observation and self-assessment protocols specific to their content area. Reflections focus on the tasks students are engaged in; the supports and scaffolds used to make student thinking visible, elicit student ideas, promote collaboration, and promote productive academic conversation and communication; formative, summative and self-assessment tools and techniques and the extent to which they are valid and reliable for diverse learners, including ELs, and appropriately accommodate for diverse student needs, including ELs' language proficiency levels; ways rigorous content is made accessible and relevant to all students, particularly those from non-mainstream backgrounds; ways learning plans and tasks address relevant, real-world issues in a critical, action-oriented manner.

Lesson Plan & Rationale – 10% of Final Grade

Candidates interact collaboratively with cooperating educators to develop and implement a lesson that addresses content and language objectives and employs culturally responsive and race-visible pedagogies. Candidates discuss and defend their instructional decision-making in a written rationale that draws from relevant research and theory. Candidates reflect on their teaching, including what worked well, what could have been improved, and what suggestions they have for future lessons.

Weekly Reading Reflections – 10% of Final Grade

Candidates complete weekly critical reading reflections, drawing meaningful connections to partner school site observations, class readings, activities and discussions, and personal experiences. Emphasis is placed on critical thinking around issues and topics involving racism, discrimination, and prejudice within education and across content areas.

Participation – 10% Final Grade

Candidates engage actively and productively in class sessions and partner school site visits.

Grading Policy and Scale

The final grade is based upon the completion of course requirements, as weighted below and following this scale:

93% - 100%	A	87% - 89%	B+	77% - 79%	C+	67% - 69%	D+
90% - 92%	A-	83% - 86%	B	73% - 76%	C	63% - 66%	D
		80% - 82%	B-	70% - 72%	C-	62% and Below	F

Smart Evaluation

Towards the end of the course, students will receive an email from the Office of Institutional Effectiveness reminding them to provide feedback on the course. They will receive consistent reminders throughout the period when the evaluation is open, and the reminders will stop once they have completed the evaluation.

- The evaluation is completely anonymous. When the results are released, instructors and departments will not be able to tell which student provided the individual feedback.
- Because it is anonymous and the results are not released to faculty or departments until after grades have been submitted, the feedback will not impact a student's grade.

Dispositions

All students are assessed on one or more dispositional areas of growth across our programs: **Professionalism, Inquiry, and Social Justice**. The instructor in your course will identify the dispositions assessed in this course and you can find the rubrics related to these dispositions in LiveText. *For those students in non-degree programs, the rubric for dispositions may be available through Sakai, TaskStream or another platform.* Disposition data is reviewed by program faculty on a regular basis. This allows faculty to work with students to develop throughout their program and address any issues as they arise.

LiveText

All students, *except those who are non-degree*, must have access to LiveText to complete the benchmark assessments aligned to the Conceptual Framework Standards and all other accreditation, school-wide and/or program-wide related assessments. You can access more information on LiveText here: [LiveText](#).

Syllabus Addendum Link

- <https://www.luc.edu/education/academics/syllabi/>

This link directs students to statements on essential policies regarding *academic honesty, accessibility, ethics line reporting* and *electronic communication policies and guidelines*. We ask that you read each policy carefully.

This link will also bring you to the full text of our conceptual framework that guides the work of the School of Education – ***Social Action through Education***.

Center for Student Access and Assistance (CSAA)

Should you encounter an unexpected crisis during the semester (e.g., securing food or housing, addressing mental health concerns, managing a financial crisis, and/or dealing with a family emergency, etc.), I strongly encourage you to contact the Office of the Dean of Students by submitting a CARE Referral for yourself or a peer in need of support: www.LUC.edu/csaa. If you are uncomfortable doing so on your own, please know that I can submit a referral on your behalf.

Recording of Online Class Sessions

Software will NOT be used to record live class discussions unless otherwise stated by the professor in advance.

Assuring privacy among faculty and students engaged in online and face-to-face instructional activities helps promote open and robust conversations and mitigates concerns that comments made within the

context of the class will be shared beyond the classroom. As such, recordings of instructional activities occurring in online or face-to-face classes may be used solely for internal class purposes by the faculty member and students registered for the course, and only during the period in which the course is offered. Students will be informed of such recordings by a statement in the syllabus for the course in which they will be recorded. Instructors who wish to make subsequent use of recordings that include student activity may do so only with informed written consent of the students involved or if all student activity is removed from the recording. Recordings including student activity that have been initiated by the instructor may be retained by the instructor only for individual use.

Class Conduct

One important aspect of a Jesuit education is learning to respect the rights and opinions of others. Please respect others by (1) allowing all classmates the right to voice their opinions without fear of ridicule, and (2) not using profanity or making objectionable (gendered, racial or ethnic) comments, especially comments directed at a classmate.