Curriculum and Instruction

Degree Offered
• Doctor of Education

Nature of the Program
NOTE: Currently not accepting new students into this program.

The Curriculum and Instruction Doctorate in Education Program provides a personal approach to graduate studies. This program creates individually-planned programs of study to meet the unique experiences and professional goals of each student. Designed to meet the needs of working professionals, the program's courses are offered in the evenings. The program provides flexibility to support career goals regarding educational research, curriculum design and evaluation, instructional support, and/or leadership in K-12 schools, universities, and other educational organizations. The program addresses three broad areas:

• A major emphasis in one of the following areas: curriculum studies, social theory, teaching and learning, diversity, and technology.
• A specialization or minor in one of the following areas: content (e.g. English education, STEM education, etc.) or integrated area (i.e., diversity, technology, evaluation, research, foundations, etc.)
• Research and educational foundations core: emphasizes the centrality of research commitment and competence—the ability and eagerness to conduct research as well as the ability to read, interpret and engage in professional discourse about research.

PROGRAM OBJECTIVES
The Ed.D. in Curriculum and Instruction prepares students to teach in higher education or to work with school districts or other agencies and organizations where teaching and learning is emphasized. The program provides flexibility to support career goals regarding curriculum design and evaluation, instructional support, and/or leadership in K-12 schools, universities, and other learning organizations.

PROGRAM OUTLINE
When admitted to the doctoral program each student is assigned an adviser. The role of the adviser is to help the student develop a program of study and put together the initial doctoral committee. Within the first 18 hours of formal doctoral coursework the student must submit a Doctoral Committee Form with signatures of at least 3 members, and a Program of Study Form signed by all Doctoral Committee members. Upon completion of the Program of Study form, the Doctoral committee must be composed of a minimum of five members, of which three must be regular members of the graduate faculty of the College of Education and Human Services. The student's major adviser (chairperson) must be from the major program area and must be a regular member of the graduate faculty. At least two and no more than three members of the doctoral committee must be from the major program area of study. At least one member of the doctoral committee must be from the minor program area of study. At least one member of the doctoral committee, who has professional relevance to the program of study, may be from outside of the program area. * No more than one person may be a non-member of the graduate faculty.

Once the student has selected a committee, it is formalized by the Doctoral Committee Approval form, which is signed by each committee member, the major chairperson, the department chairperson, and the student. It is then submitted to the Office of Student Success where the signature of the Dean or Dean's designee will be obtained.

The student, with the approval of the student's major adviser, may initiate a change in committee membership, by completing a Change of Committee form with signatures of the member being replaced (if still available to serve), the student, the major adviser, and the new committee member. It is then submitted to the Office of Student Success where the signature of the Dean or Dean’s designee will be obtained on the form. The Office of Student Success compiles all student forms, tracks students’ progress, and checks compliance with university and college procedures.

Admissions
NOTE: Currently not accepting new students into this program.

All applicants must comply with the requirements of West Virginia University, the College of Education and Human Services, and curriculum and instruction program area. Prospective candidates to the Curriculum & Instruction Ed.D must:

• Submit WVU Graduate application for admission, found at https://admissions.wvu.edu/how-to-apply. (Be sure to upload all required information)
• Submit proof of 3.0 or higher undergraduate GPA
• Submit proof of 3.25 or higher graduate GPA
• Submit scores for Graduate Records Examination (GRE) or Millers Analogy Test (MAT), no older than five years. Please contact department for minimum score requirements.
• Submit scores for TOEFL (international students). TOEFL scores must be at least 79 (internet version), 213 (computer-based), or 550 (paper-based) 79-80 iBT or IELTS 6.5.
REQUIRED SUPPLEMENTAL MATERIALS

- Scholarly writing samples that provide clear evidence of the student's academic writing ability.
- Three letters of recommendation that explicitly address the student's potential as a C&I doctorate student.
- Personal Vita
- A goal statement that provides a clear statement of professional goals, well written and clearly indicates how the applicant's goals fit with the program.

A face-to-face, phone, or Internet interview may be required before students are formally admitted.

An Admissions Committee composed of faculty members will screen all applications and materials. **Incomplete applications will not be reviewed.**

Doctor of Education

MAJOR REQUIREMENTS

A minimum cumulative GPA of 3.25 is required in all graduate coursework

<table>
<thead>
<tr>
<th>Research Core</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDP 710 Thesis/Dissertation Bootcamp</td>
<td></td>
</tr>
<tr>
<td>EDP 613 Statistical Methods 1</td>
<td></td>
</tr>
<tr>
<td>SCFD 615 Qualitative Research Methods</td>
<td></td>
</tr>
<tr>
<td>SCFD 715 Advanced Qualitative Research</td>
<td></td>
</tr>
<tr>
<td>Additional 600-level or higher research course</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Major Requirements</th>
<th>28</th>
</tr>
</thead>
<tbody>
<tr>
<td>C&amp;I 701 Curriculum Development</td>
<td></td>
</tr>
<tr>
<td>C&amp;I 707 Theories, Models and Research of Teaching</td>
<td></td>
</tr>
<tr>
<td>C&amp;I 708 Contemporary Determinants of Curriculum</td>
<td></td>
</tr>
<tr>
<td>C&amp;I 786 Curriculum Evaluation</td>
<td></td>
</tr>
<tr>
<td>C&amp;I 788 Higher Education Curriculum</td>
<td></td>
</tr>
<tr>
<td>C&amp;I 789 Teaching in Higher Education</td>
<td></td>
</tr>
<tr>
<td>C&amp;I 799 Graduate Colloquium</td>
<td></td>
</tr>
<tr>
<td>C&amp;I 794 Seminar</td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Social and psychological foundations Core</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCFD 620 Philosophy of Education</td>
<td></td>
</tr>
<tr>
<td>SCFD 640 History of American Education</td>
<td></td>
</tr>
<tr>
<td>SCFD 793 Special Topics</td>
<td></td>
</tr>
<tr>
<td>EDP 703 The Adult Learner</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Minor area</th>
<th>24</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Dissertation</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>C&amp;I 798 Thesis or Dissertation</td>
<td></td>
</tr>
</tbody>
</table>

Total Hours: 85

RESIDENCY

This program requires two consecutive semesters of residency.

COMPREHENSIVE EXAMINATIONS

Comprehensive examinations (major, minor and core) are sometimes called “comprehensives,” “competencies,” “prelims,” or “qualifying exams.” These examinations occur when coursework has been completed or substantially completed and are intended to provide a rigorous comprehensive assessment of the student’s achievement and professional potential. The nature of the examinations must be specified in the program of study and must include written products covering the major, minor, and college core areas. The written components may be followed by an oral examination.

ADMISSION TO CANDIDACY

A student is officially admitted to candidacy for the Ed.D. by satisfactorily passing the comprehensive examinations in the major and minor areas of study and submitting the completed Admission To Candidacy form to the Center for Student Advising and Records. **Doctoral candidates are allowed a period of no more than five years beyond the date of Admission to Candidacy to complete the remaining degree requirements.** In the event
a student fails to meet the doctorate within five years after the date of Admission to Candidacy, s/he must apply for an extension of time. This may require repeating comprehensive examinations and/or meeting any other requirements specified by the student's committee and University.

After Admission to Candidacy, students are required to register for at least one credit hour each term (excluding summer) as a condition of their continued candidacy. Students who fail to maintain continuity of enrollment can be dropped from candidacy.

**Prospectus**

When a student passes his or her comprehensive exam, s/he then forms his or her dissertation committee by adding two additional committee members for a total of five members. These new committee members should be selected based upon the degree to which they support the research focus and the line of inquiry of the student's dissertation. The prospectus should address the first three chapters of the dissertation (or their equivalent):

- Statement of the problem and rationale
- Review of relevant literature
- Research methods and study design

Prior to completing the prospectus, the student and his or her adviser should have a clear understanding of the role each committee member will play in terms of feedback for the prospectus. Some members may need to be more involved to provide guidance and feedback as the prospectus is developed while others may be able to wait until the document is complete before providing guidance or feedback. These roles and relationships should be negotiated and clearly communicated within the committee as the student begins his or her work on the prospectus. Each committee member must receive a copy of the prospectus at least two weeks before the prospectus defense. The student should confirm whether each committee member wants a hard copy or an electronic copy of the document at that time.

The prospectus defense should be advertised no later than one week before it takes place. The announcement should include the following: Title, abstract, author, defense time and location. It should take place on campus and in a location where the public can attend. While the prospectus defense is public up to the point of committee deliberation, the adviser may exercise discretion regarding attendees if he or she feels that the necessary conditions for a supportive and productive meeting are compromised. Guests to any defense are expected to limit their explicit participation in the defense to the specified question and answer period.

**Dissertation**

A student's dissertation should demonstrate coherent line of inquiry that represents a reasonable outcome given the nature and content of his or her program. Members of the dissertation committee should have adequate expertise to judge the quality of the methods, content, and results of the dissertation. If the committee lacks any element of expertise needed to judge the quality of any part of the dissertation, then the student and adviser should strive to seek out external support to support those needed elements in order to ensure the overall quality of the dissertation.

When the dissertation committee feels that the final document has met reasonable expectations in terms of quality, the student, in consultation with his or her adviser, should set up the defense meeting with his or her full committee.

Committee members are to receive copies of the dissertation at least three weeks prior to the defense. The Graduate Advising Office must also receive the Shuttle Sheet Request form signed by the committee members three weeks prior to the defense. This sheet indicates that all committee members have received the dissertation and can attend the defense (See Shuttle Sheet Request form). The defense date, including the title, abstract, author, time and location of defense, is advertised at this time.

During the dissertation defense, the student presents an overview of his or her study, focusing on the results and analysis. Members of the committee will ask questions of the student related to the study. The dissertation chair will facilitate the question and answer portion of the defense and will determine whether time and conditions permit additional questions from guests. Deliberations regarding the dissertation defense are conducted immediately following the presentation and question and answer period. The committee members conduct these deliberations exclusively while the student and guests are not in the room. Following the deliberations, the committee shares its decision regarding the student's performance:

- Passing the dissertation and oral defense with minor corrections
- Deferral of judgment until substantive changes are made and approved by the dissertation chair
- Failure of oral defense and/or dissertation. The student cannot pass the dissertation and oral defense if more than one member of the committee judges that either is unacceptable.

After the student has passed the oral defense and the five-member committee has approved the document, the student completes the document according to the WVU Electronic Thesis Document format (See https://etd.lib.wvu.edu/). The Dissertation Defense form must be submitted to Char Allen in Center For Advising and Records within 24 hours of the defense.

Each student is required to complete his or her prospectus meeting and dissertation defense within five years of being admitted to candidacy. If the student fails to meet this requirement, he or she will be removed from the doctoral program.
Major Learning Outcomes

CURRICULUM AND INSTRUCTION

The learning goals for the Doctor of Education program in Curriculum and Instruction are to prepare students who:

- Have commitment and skills to engage in life-long learning;
- Are effective communicators;
- Recognize that teaching is a professional, moral, and ethical enterprise with well-developed ethical frameworks which facilitate effective teaching;
- Will serve as a facilitator of learning for all students;
- Possess in-depth knowledge of both pedagogy and content, and the relationships between them;
- Are reflective practitioners;
- Are aware of, and have respect for, human diversity;
- Value and integrate knowledge from a wide variety of fields, are creative and open to new ideas, and are able to act constructively in a world characterized by technological, cultural, and societal diversity and change.

COURSES

C&I 501. Essential Topics for Teaching. 3 Hours.
This course provides an initial exposure for undergraduate and graduate students to themes in education to foster appreciation of the classroom experience by empowering teachers to be classroom leaders.

C&I 524. Middle School Number/Algebra Teaching 1. 1 Hour.
PR or CONC: MATH 524. Issues involved with sets of numbers as examples of algebraic systems, properties of groups, rings and fields. Properties of polynomials and polynomial rings. Mathematical modeling with finite differences and least squares. Applications in model curricula.

C&I 525. Middle School Number/Algebra Teaching 2. 1 Hour.
PR or CONC: MATH 525. Continuation of C&I 524. Issues involved with sets of numbers as examples of algebraic systems, properties of groups, rings, and fields. Properties of polynomials and polynomial rings. Mathematical modeling with finite differences and least squares.

C&I 528. Middle School Function/Change Teaching 1. 1 Hour.
PR or CONC: MATH 528. Teaching and Learning function concept operations on functions, limits, continuity, Intermediate Value Theorem, families of curves, optimization and area. Classroom applications, current research in learning. Applications in model curricula.

C&I 529. Middle School Functions/Change Teaching 2. 1 Hour.

C&I 530. Mathematics in the Elementary School. 3 Hours.
PR: Consent. Addresses current issues and trends in elementary mathematics education. Designed for the practicing elementary teacher.

C&I 533. Corrective Techniques in Mathematics Education. 3 Hours.
PR: Consent. Materials and methods used in diagnosis and remediation of learning difficulties in mathematics.

C&I 581. Independent Research in Curriculum Studies. 1-6 Hours.
Faculty-supervised study of topics not available through regular course offerings.

C&I 584. Student Teaching: Elementary-Early Childhood. 2-12 Hours.
PR: For elementary and early childhood undergraduates who meet eligibility requirements and other guidelines. (Applicable to preschool, nursery, day care, child care, kindergarten, primary grade, or elementary school.)

C&I 585. Student Teaching: Secondary Education. 2-12 Hours.
PR: Students enrolled in secondary education undergraduate programs who meet eligibility requirements and other guidelines.

C&I 587. Advanced Clinical Experience. 1-6 Hours.
PR: Consent. Clinical experience in teaching-learning situations at any level.

C&I 588. Professional Field Experience. 2 Hours.
Students are placed in classroom settings where they are required to observe classroom teachers and engage in instructional and non-instructional programming.

C&I 591. Advanced Topics. 1-6 Hours.
PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

C&I 592. Directed Study. 1-6 Hours.
Directed Study, reading, and/or research.

C&I 593. Special Topics. 1-6 Hours.
A study of contemporary topics selected from recent developments in the field.
C&I 594. Seminar. 1-6 Hours.
Special seminars arranged for advanced graduate students.

C&I 600. United States Education for International Students. 3 Hours.
PR: International students with graduate status and developing oral and written English skills. To assist international students in understanding the U.S. system of education. Included: dominant U.S. values related to education, structure of U.S. education at all levels, models and strategies, field trips, and international comparisons.

C&I 601. The Elementary-School Curriculum. 3 Hours.
PR: 20 hours of undergraduate credit in elementary education, or consent. Analysis of curriculum designs in elementary education with emphasis on methods and techniques of development.

C&I 602. Curriculum and Teaching Principles. 3 Hours.
This course will give the student a basic foundation in the principles, development, and design of curriculum and teaching models.

C&I 603. Counselors & Classrooms. 3 Hours.
Bridging theory and practice, this course helps P-12 school counselors create effective learning environments for all students specifically during their classroom-based lessons.

C&I 604. School Curriculum. 3 Hours.
PR: Teaching experience or consent. Emphasizes socioeconomic and cultural influences on curriculum; principles of curriculum development; curriculum building in various teaching fields; and techniques of experimentation and evaluation.

C&I 605. Twenty-First Century Teaching and Learning. 3 Hours.
Interdisciplinary content if a 3 credit hour course. This course examines new and emerging technologies as they relate to classroom integration and pedagogy.

C&I 606. Curriculum for Middle Childhood. 3 Hours.
Survey course which includes: historical, social, and cultural influences on the curriculum; the learner characteristics; curriculum and instructional organization and their relationship to facilities available; and evaluation and implementation of middle childhood curriculum.

C&I 608. Introduction to Alternative Learning Environments. 3 Hours.
This course will provide opportunities for educators to explore and analyze the trends and issues in alternative learning environments in public education.

C&I 609. Experiences in Alternative Learning Environments. 6 Hours.
PR: C&I 608 and SCFD 620 and consent. This course helps teachers to learn and practice skills that are needed to be an effective teacher in an alternative teaching environment. (Alternate years.).

C&I 612. Early Childhood Curriculum. 3 Hours.
PR: C&I 410 and C&I 411 or consent. Curriculum development for early childhood education Pre-K to 4th grade, including social, creative, cognitive, physical, and academic goals. Societal, historical, and theoretical influences on early childhood curriculum are examined.

C&I 614. Early Childhood Instruction. 3 Hours.
PR: C&I 410 and C&I 411 or consent. Design of instruction for continuous improvement toward mastery of curriculum goals for early childhood education Pre-K to 4th grade.

C&I 615. Issues in Holocaust Education. 3 Hours.
Course examines important issues related to the Holocaust, and their implications for inclusion in curriculum. It examines instructional procedures helpful to youth in trying to comprehend the Holocaust's meaning for living in the 21st century.

C&I 616. Early Childhood Program Development and Evaluation. 3 Hours.
PR: C&I 410 and C&I 411 or consent. Development, administration, and evaluation of facilities, programs, and support systems for early childhood education Pre-K to 4th grade. Includes a focus on family connections and support systems related to early childhood classrooms.

C&I 617. Language Arts in Early Childhood. 3 Hours.
Designing instruction for an integrated development of writing, reading, speaking and listening with an emphasis on literacy acquisition in early childhood education pre-K to 4th grade.

C&I 618. Storytelling in Early Childhood. 3 Hours.
This course will assist students in telling, reading, and creating stories for children. Techniques, methods, and research effective in the art of storytelling will be examined and applied as they relate to total child development.

C&I 623. Contemporary Issues in English Education. 3 Hours.
PR: Graduate standing. Provides the student with a knowledge of several contemporary issues in English teaching which have immediate and long-range ramifications for secondary-school English instruction. (1 hr. lec., 2 hr. sem.).

C&I 624. Advanced Methods in English Education. 3 Hours.
PR: C&I 602 and EDP 600 and Graduate standing. (For classroom teachers of English.) Analysis of recent trends and innovations in methodology. Readings and discussions will lead to the development of instructional strategies and units for secondary English classrooms. (1 hr. lec., 1 hr. lab., 1 hr. sem.).
C&I 625. Leadership Field Experiences and Clinical Practice. 3 Hours.
Students engage in a sequence of field experiences and clinical practice. Activities emphasize school-based leadership focused experiences. Participants interview educational stakeholders and develop a data focused understanding of school improvement foci and efforts. Participants also develop, implement, and report on an inquiry project focused on the planning, enactment, and analytical reflection of an implemented professional development experience.

C&I 630. Problem Solving in Math. 3 Hours.
PR: C&I 602 and EDP 600. A capstone course designed to further develop student's conceptual understanding of mathematics.

C&I 631. Mathematics in the Elementary School. 3 Hours.
PR: Consent. Addresses current issues and trends in elementary mathematics education. Designed for the practicing elementary teacher.

C&I 632. Research in Math Curriculum and Technology. 3 Hours.
This graduate level course is designed to focus on research and trends associated with applications of technology and curriculum in mathematics settings. Class topics will span curriculum, technology, and assessment in math education.

C&I 633. Mathematics in the Junior High School and Middle School. 3 Hours.
A methods course designed to teach selected topics including lesson planning, developing appropriate teaching/learning methods, and evaluations from middle school mathematics.

C&I 634. Mathematics in the Secondary School. 3 Hours.
PR: C&I 602 and EDP 600 and Consent. Patterns of mathematics curriculum in the secondary school; practices in teaching mathematics; preparation, selection and use of instructional materials. Designed for the practicing secondary mathematics teacher.

C&I 635. Selecting, Designing, and Using Mathematical Tasks in K-6. 2 Hours.
PR: Consent. This is the first of four mathematics pedagogy courses in the elementary mathematics specialist endorsement program. Topics include identifying the cognitive demand of tasks, identifying influences of cognitive demand on student learning, instructional moves that maintain cognitive demand of tasks, and strategies for adapting tasks to increase cognitive demand. Tasks examined will cover a range of K-6 mathematics.

C&I 636. Learning Trajectories in Elementary Mathematics. 2 Hours.
PR: C&I 635. This is the second of four mathematics pedagogy courses designed for students pursuing the elementary mathematics specialist endorsement. This course examines research-based descriptions of learning trajectories for how children's thinking and understanding develop for specific mathematical content. Learning trajectories studied include those for quantity, counting, computation, and shape. Students will examine effective use of learning trajectories in instruction.

C&I 637. Classroom Practices for Effective Learning Environments in Elementary Mathematics. 2 Hours.
PR: C&I 636. This is the third of four mathematics pedagogy courses designed for students pursuing the elementary mathematics specialist endorsement. Students will examine strategies for developing a classroom environment that supports all students in learning mathematics. Emphasis will be placed on understanding teaching practices and pedagogical strategies identified in mathematics education research literature as being effective in supporting student learning.

C&I 638. Planning, Implementing, and Assessing Mathematics Instruction. 2 Hours.
PR: C&I 637. This is the fourth of four mathematics pedagogy courses designed for students pursuing the elementary mathematics specialist endorsement. This course provides opportunities for students to plan, implement, assess, and reflect upon their own mathematics instruction, drawing upon knowledge, skills, and practices developed in the prerequisite courses of the elementary mathematics specialist endorsement sequence.

C&I 639. Science Research and Technology Ethics. 3 Hours.
PR: Graduate Standing. Students learn basic concepts of responsible research conduct, public communication and teaching research ethics by way of on-line discussions, and peer-review of case-solutions/reasoning and application projects.

C&I 640. Science in the Elementary School. 3 Hours.
PR: 20 hours of undergraduate credit in elementary education or consent. Analysis of methods, curriculum patterns, and trends in elementary school science. Understanding and development of scientific attitudes appropriate at the elementary-school level.

C&I 643. Brain-Based Teaching and Learning. 3 Hours.
This course provides an integrative, interactive, and collaborative introduction to the emerging interdisciplinary field of brain-based teaching and learning. Through synchronous and asynchronous classroom discussions and applied exercises, students will draw on knowledge from neuroscience, cognitive psychology, biology, and education to explore the theoretical foundations, methods, and applications of teaching and learning from a brain-based perspective.

C&I 644. Science in the Secondary School. 3 Hours.
PR: C&I 602 and EDP 600 or appropriate professional experience. Nature and function of science in secondary schools supported by current research and development; includes analysis of structure and practice of science curriculum and instruction issues.

C&I 645. Global Climate Change. 3 Hours.
A graduate-level web-based course that presents the scientific evidence related to global climate change and the implications for science, technology and society.

C&I 646. Science: Native American Views. 3 Hours.
This course examines the science and non-scientific views in areas of health and healing, environment, and technological applications in traditional Native American and Western cultures.
C&I 647. Science and Mathematics Applications for Nutrition and Energy Content. 3 Hours.
This course is designed for teachers (4-12) of science or math. The course integrates nutrition and physical activity content applicable to students' lives.

C&I 648. Science/Technology: Society Perspectives. 3 Hours.
Course provides students with an understanding of the characteristic relationships between science, technology, and society. Course examines impacts of these relationships on social and natural communities.

C&I 649. History/Philosophy of Science. 3 Hours.
Examines the nature of science and how social forces have interacted with the process of science to promote the dynamic development of the current body of scientific knowledge.

C&I 650. Social Studies in the Elementary School. 3 Hours.
PR: C&I 602 and EDP 600 or consent. Comprehensive consideration of objectives, content, methods, including unit procedures; materials including objects, models, exhibits, and museum items, as well as textbooks, collateral reading, maps, and graphs; means of evaluating social growth and development.

C&I 654. Social Studies in the Secondary School. 3 Hours.
PR: C&I 602 and EDP 600 or consent. Nature and function of social studies in the secondary school; utilization of community, state, national, and world resources in teaching; selection of content for teaching purposes; curriculum construction with emphasis on resource and teaching units.

C&I 655. Challenges in Teaching History. 3 Hours.
This course will provide an initial exposure for pre-service social studies teachers to address the challenge of teaching controversial public issues of recent history.

C&I 656. Principles of Economic Education. 3 Hours.
Workshop for principals, teachers, and supervisors with emphasis on the economic structure of our society and methods of integrating economics into the school program. (Sponsored jointly by College of Human Resources and Education and College of Business and Economics.).

C&I 657. Games, Learning, & Design. 3 Hours.
Play, gaming, and design are explored as they relate to constructionist views of learning, common in makerspaces, formal and informal learning environments, and project-based learning environments. Students will engage in an iterative design process as part of a team, while considering the pedagogical implications of integrating play and design into K-12 learning environments.

C&I 658. Computational Literacy and Coding for Learning. 3 Hours.
Students will engage in research- and project-based learning activities as well as online discussions to learn about computer science in ways that supports meaningful learning in both formal (K-12 classrooms, professional development) and informal (DIY communities, afterschool, camp, Makerspaces) learning environments.

C&I 659. Hypermedia in Learning. 3 Hours.
Survey of theory, research, and application of hypermedia and the authoring language - Authorware.

C&I 660. Software Development. 3 Hours.
Principles and models of software design and the authoring language-HyperCard.

C&I 661. Practitioner Inquiry. 3 Hours.
PR: Departmental approval. Engaging in inquiry enables students to explore the underlying assumptions, biases, values, and ideologies inherent in their curricula and pedagogies and the policies and practices of their contexts. In this course, students design and conduct studies and cultivate the tools and habits of mind necessary for transforming the ways we do school and improving the life chances of all students.

C&I 662. Assessing the Impact of Computer-Based Learning. 3 Hours.
Survey of the current findings in computer-based learning; couples statistical features and design scenarios.

C&I 663. Professional Learning Communities: Creating Spaces for Collaboration, Coaching, and Praxis. 3 Hours.
PR: C&I 670. This course introduces students to strategies for developing and engaging in professional learning communities and learning to teach through studying teaching. Students explore the philosophical/research-based foundations and practices of student-centered coaching; engage in analyzing children’s thinking and work/performances, explore connections between their current practice and student thinking/performance; and plan for and engage in a coaching cycle that addresses student needs.

C&I 664. Teacher Leadership: Transforming Identities, Contexts, and Practices. 3 Hours.
PR: C&I 670 and C&I 672. This course focuses on understanding the current scholarship of the leadership roles teacher leaders pursue (e.g., teacher as exemplary practitioner, curriculum decision-maker, researcher, change agent, facilitator of job-embedded professional development) as they facilitate teacher learning and school renewal. Students also identify and create possible action plans for the reform and transformation of the sacred stories of their place(s).

C&I 665. Children's Television: Problems and Potentials. 4 Hours.
PR: Consent. Provides parents and teachers with strategies for monitoring, evaluating, and directing television viewing habits of youth; pertinent research studies, school and community action programs, and home and school education programs are discussed and practiced.

C&I 666. Technology Integration Through Capstone Experience. 3 Hours.
Capstone for elementary and secondary education programs.
C&I 681. Independent Research in Curriculum and Instruction. 1-6 Hours.
Faculty supervised study of topics not available through regular course offerings.

C&I 685. Supervision of Student Teachers. 3 Hours.
PR: Consent. For persons working or intending to work with education students in field experiences. Course focuses on the development and application of supervisory skills in effective guidance of student teachers and education students.

C&I 686. Teaching Strategies for Middle Childhood. 3 Hours.
Surveys instructional strategies appropriate for facilitating preadolescent learning. Includes the role of the teacher and how the teacher uses resources within and outside the classroom as they relate to instruction of the learner, age 10-14 years.

C&I 687. Advanced Teaching Strategies. 3 Hours.
PR: Graduate standing. Deals with methods as one critical variable in teaching. Examines ways and means to describe, plan the use of, implement, and evaluate teaching methods. Analysis and implementation of teaching methods and component skills of teaching.

C&I 688. Classroom Organization and Management. 3 Hours.
Discusses research identifying components of classroom organization and environment which influence learning; reviews teacher behaviors and learning activities which research indicates lead to more effective teaching. Stresses implementation strategies relevant to classroom settings.

C&I 689. Cultural Diversity in the Classroom. 3 Hours.
PR: Graduate standing or consent. Provides opportunities for educators to increase awareness of their own ethnic backgrounds, foster understandings of the inter-active effects of gender, race, ethnicity and socio-economic status, and develop appropriate teaching materials and methods.

C&I 691. Advanced Topics. 1-6 Hours.
PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

C&I 692. Directed Study. 1-6 Hours.
Directed study, reading, and/or research.

C&I 693. Special Topics. 1-6 Hours.
A study of contemporary topics selected from recent developments in the field.

C&I 694. Seminar. 1-6 Hours.
Special seminars arranged for advanced graduate students.

C&I 695. Independent Study. 1-6 Hours.
Faculty supervised study of topics not available through regular course offerings.

C&I 696. Graduate Seminar. 1 Hour.
PR: Consent. Each graduate student will present at least one seminar to the assembled faculty and graduate student body of his or her program.

C&I 697. Research. 1-15 Hours.
PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading may be S/U.).

C&I 701. Curriculum Development. 3 Hours.
PR: Consent. The study of the concepts underlying school curriculum.

C&I 707. Theories, Models and Research of Teaching. 3 Hours.
PR: SCFD 620 or consent. The theories behind selected models of teaching as well as research in teaching and best practices.

C&I 708. Contemporary Determinants of Curriculum. 3 Hours.
PR: C&I 701 and SCFD 640 or consent. Contemporary determinants of curriculum development.

C&I 709. Curriculum Theories. 3 Hours.
PR: C&I 708 or consent. Theories underlying curriculum from the past to the present and projected to the future.

C&I 710. Advanced Supervision. 3 Hours.
PR: Consent. Exploring theories, research, and practices of pre-service and in-service instructional supervision in the classrooms of novice and mature teachers. (Also listed as EDLS 701).

C&I 738. Survey of Major Issues in Mathematics Education. 3 Hours.
PR: Consent. Individual and group research on selected topics in mathematics education.

C&I 757. Social Studies Curriculum Development, K-12. 3 Hours.
PR: C&I 601 or C&I 604 and C&I 650 or C&I 654. Stresses the application of principles and procedures pertinent to the development of social studies programs in elementary and secondary schools. Strong emphasis will be placed on the analysis of current social studies curriculum materials.

C&I 786. Curriculum Evaluation. 3 Hours.
This course enables students to develop skills and strategies necessary for curriculum evaluation and improvement of programs. Included will be a historical review of evaluation and analysis of approaches to curriculum evaluation.
C&I 787. Professional Development for Teaching Effectiveness. 3 Hours.
PR: Advanced graduate standing or consent. Explores professional learning tools that lead to effective teaching; investigates the conditions that facilitate professional learning and effective teaching by examining the teacher, learner, content and environment; examines how educators study and resolve problems.

C&I 788. Higher Education Curriculum. 3 Hours.
Analysis and evaluation of post-secondary curriculum with emphasis on organizing, translating, and applying findings. Topics include curriculum shaping forces; institutional patterns; policy, components and change; and principles and techniques of development, experimentation, and evaluation.

C&I 789. Teaching in Higher Education. 3 Hours.
PR: Graduate standing. A general methods course involving instructional concepts and strategies for present/prospective faculty in higher education. Comprehensive consideration of objectives, planning criteria and methods, teaching strategies, and evaluation in meeting the needs of adult learners.

C&I 790. Teaching Practicum. 1-3 Hours.
PR: Consent. Supervised practice in college teaching of curriculum and instruction. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain teaching experience. (Grading will be S/U.).

C&I 791. Advanced Topics. 1-6 Hours.
PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

C&I 792. Directed Study. 1-6 Hours.
Directed study, reading, and/or research.

C&I 793. Special Topics. 1-6 Hours.
A study of contemporary topics selected from recent developments in the field.

C&I 794. Seminar. 1-6 Hours.
Special seminars arranged for advanced graduate students.

C&I 795. Independent Study. 1-9 Hours.
Faculty supervised study of topics not available through regular course offerings.

C&I 796. Graduate Seminar. 1 Hour.
PR: Consent. Each graduate student will present at least one seminar to the assembled faculty and graduate student body of his or her program.

C&I 797. Research. 1-15 Hours.
PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading may be S/U.).

C&I 798. Thesis or Dissertation. 1-6 Hours.
PR: Consent. This is an optional course for programs that wish to provide formal supervision during the writing of student reports (698), or dissertations (798). Grading is normal.

C&I 799. Graduate Colloquium. 1-6 Hours.
PR: Consent. For graduate students not seeking coursework credit but who wish to meet residency requirements, use the University’s facilities, and participate in its academic and cultural programs. Note: Graduate students who are not actively involved in coursework or research are entitled, through enrollment in their department’s 699/799 Graduate Colloquium to consult with graduate faculty, participate in both formal and informal academic activities sponsored by their program, and retain all of the rights and privileges of duly enrolled students. Grading is S/U; colloquium credit may not be counted against credit requirements for masters programs. Registration for one credit of 699/799 graduate colloquium satisfies the University requirement of registration in the semester in which graduation occurs.

C&I 930. Professional Development. 1-6 Hours.
Professional development courses provide skill renewal or enhancement in a professional field or content area (e.g., education, community health, geology). These tuition-waived continuing education courses are graded on a pass or fail grading scale and do not apply as graduate credit toward a degree program.

C&I 931. Professional Development. 1-6 Hours.
Professional development courses provide skill renewal or enhancement in a professional field or content area (e.g., education, community health, geology). These tuition-waived continuing education courses are graded on a pass/fail grading scale and do not apply as graduate credit toward a degree program.

C&I 932. Profession Development. 1-6 Hours.
Professional development courses provide skill renewal or enhancement in a professional field or content area (e.g. education, community health, geology). These tuition-waived continuing education courses are graded on a pass/fail grading scale and do not apply as graduate credit toward a degree program.

C&I P187. . 3 Hours.