EducatioN - Doctor of Philosophy (PhD)

Overview
The School of Education offers a single doctoral degree in Education. The degree has seven program areas of emphasis, from which a student chooses:

- Educational Foundations, Policy and Practice
- Equity, Bilingualism and Biliteracy
- Learning Sciences and Human Development
- Literacy Studies
- Research and Evaluation Methodology
- STEM Education
- Teacher Learning, Research and Practice

Requirements

Required Courses and Credits
Students must successfully complete 56 credit hours of approved coursework, with 12 credit hours of core courses (see below) taken as a doctoral cohort during the first two years of study. The remaining 44 credits are completed in the student’s area of emphasis. Students work with their faculty advisor to develop an individualized, coherent program of study that includes advanced theoretical, methodological and writing experiences.

Students must maintain at least a B (3.0) average with no grade lower than a B- while enrolled.

Students must complete 30 hours of dissertation credit. Students must be registered for a minimum of 5 dissertation hours per semester after successful completion of their comprehensive exam.

All PhD students are required to take the following four courses in their first and second years:

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>EDUC 8210</td>
<td>Ways of Knowing in Educational Research</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 8220</td>
<td>Introduction to Educational Research and Policy</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 8230</td>
<td>An Introduction to Quantitative Methods in Educational Research</td>
<td>3</td>
</tr>
<tr>
<td>EDUC 8250</td>
<td>Qualitative Research Methods in Education</td>
<td>3</td>
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Total Credit Hours 12

Area of Emphasis Course Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>EDUC 5015</td>
<td>International / Comparative Education</td>
<td></td>
</tr>
<tr>
<td>EDUC 5075</td>
<td>Sociology of Education</td>
<td></td>
</tr>
<tr>
<td>EDUC 5085</td>
<td>History of American Education</td>
<td></td>
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<tr>
<td>EDUC 6210</td>
<td>Education Policy and the Law</td>
<td></td>
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<tr>
<td>EDUC 6220</td>
<td>Gender Issues in Education</td>
<td></td>
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<tr>
<td>EDUC 6230</td>
<td>Ethics in Education</td>
<td></td>
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<tr>
<td>EDUC 6240</td>
<td>African American Education in the United States</td>
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<tr>
<td>EDUC 6250</td>
<td>Higher Education in the United States</td>
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<tr>
<td>EDUC 6260</td>
<td>Transnational Migration, Education, and Citizenship</td>
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<tr>
<td>EDUC 6325</td>
<td>Anthropology of Education</td>
<td></td>
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<tr>
<td>EDUC 7055</td>
<td>Philosophy of Education</td>
<td></td>
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<tr>
<td>EDUC 7446</td>
<td>Policy Issues in Education</td>
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<tr>
<td>EDUC 8045</td>
<td>Philosophical Issues in Educational Research</td>
<td></td>
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<tr>
<td>EDUC 8055</td>
<td>Theoretical Issues in Education Policy</td>
<td></td>
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<tr>
<td>EDUC 8125</td>
<td>Seminar: Radical Education Theories</td>
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Advanced Methods 9

Minimum nine hours of advanced research methods courses; these courses may be in advanced qualitative or advanced quantitative methods and may be taken in the School of Education or in other departments of the University. Students concentrating in History of Education or Philosophy of Education may choose to fulfill this requirement with courses in historiography or philosophical inquiry, respectively. These must be chosen in consultation with the faculty advisor.

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>COMM 6410</td>
<td>Discourse Analysis</td>
<td></td>
</tr>
<tr>
<td>EDUC 7386</td>
<td>Educational Evaluation</td>
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<tr>
<td>EDUC 7396</td>
<td>Latent Variable and Structural Equation Modeling</td>
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<tr>
<td>EDUC 7456</td>
<td>Multilevel Modeling</td>
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<tr>
<td>EDUC 7456</td>
<td>Multilevel Modeling</td>
<td></td>
</tr>
<tr>
<td>EDUC 8710</td>
<td>Measurement in Survey Research</td>
<td></td>
</tr>
<tr>
<td>EDUC 8720</td>
<td>Advanced Topics in Measurement</td>
<td></td>
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<tr>
<td>EDUC 8730</td>
<td>Advanced Qualitative Data Analysis</td>
<td></td>
</tr>
<tr>
<td>SOCY 7026</td>
<td>Feminist Research Methods</td>
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</tr>
<tr>
<td>SOCY 7121</td>
<td>Qualitative Analysis</td>
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Electives 15

Total Credits 44

Equity, Bilingualism, and Biliteracy

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>EDUC 6927</td>
<td>Readings in Equity, Bilingualism and Biliteracy</td>
<td>2</td>
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Specialty Seminar 2

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>EDUC 5615</td>
<td>Second Language Acquisition</td>
<td>2</td>
</tr>
<tr>
<td>EDUC 5635</td>
<td>Education and Sociolinguistics</td>
<td></td>
</tr>
<tr>
<td>EDUC 8615</td>
<td>Language Issues in Education Research</td>
<td></td>
</tr>
<tr>
<td>EDUC 8620</td>
<td>Language and Power</td>
<td></td>
</tr>
</tbody>
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EDUC 8630  Bilingual and Biliterate Development in Children and Adolescents
EDUC 8640  Rethinking Disability

**Advanced Methods**  
Minimum twelve hours in advanced methodology, preferably aligned with the methods to be used during dissertation research. Possible School of Education courses include the courses listed below, but methodology classes may be taken outside of the School of Education.

*Choose from:*
- EDUC 6504  Issues and Methods in Cognitive Science
- EDUC 7336  Methods of Survey Research and Assessments
- EDUC 7346  Ethnographic Methods in Educational Research
- EDUC 7386  Educational Evaluation
- EDUC 7396  Latent Variable and Structural Equation Modeling
- EDUC 7456  Multilevel Modeling
- EDUC 8710  Measurement in Survey Research
- EDUC 8720  Advanced Topics in Measurement
- EDUC 8730  Advanced Qualitative Data Analysis
- EDUC 8348  Human Development in Cultural, Historical, and Sociopolitical Contexts
  - or COMM 6410  Discourse Analysis

**Non-Education Courses**  
Minimum of six hours must be taken outside of the School of Education. Courses should be selected in consultation with your advisor and are typically at the 6000 or higher level.

**Electives**  
These courses must be selected in consultation with the faculty advisor and are typically at the 6000-level or higher.

**Total Credits**  
44

**Learning Sciences and Human Development**

**Specialty Seminar**  
EDUC 6928  Readings in Learning Sciences and Human Development

**Advanced Topics in Learning Sciences and Human Development**  
Twelve hours selected with the faculty advisor’s approval from 8000-level. Typically these are comprised of the four LSHD doctoral core courses, which are offered on a rotating basis:
- EDUC 8310  Design of Learning Environments for Radical Possibilities
- EDUC 8358  Critical Introduction to Learning Theory and Practice, Part 1
- EDUC 8359  Critical Introduction to Learning Theory and Practice, Part 2
- EDUC 8348  Human Development in Cultural, Historical, and Sociopolitical Contexts

**Advanced Methods**  
Minimum of six credit hours (equivalent to 2 semester-long courses) in advanced research methods, selected in consultation with your doctoral advisor. Advanced research methods are doctoral level courses and do not include required School of Education core courses.

**Electives**  
Minimum six elective hours must be outside Learning Sciences and Human Development, and must be courses other than those used to satisfy the core requirements and the advanced topics requirements. These electives may be used to satisfy requirements toward the Institute for Cognitive Sciences certificate.

**Total Credits**  
44

**Literacy Studies**

**Specialty Seminar**  
EDUC 6925  Readings in Curriculum and Instruction

**Literacy Doctoral Seminars**  
Minimum twelve hours of the advanced doctoral courses in literacy studies are required to be taken within the first four years. Students will enroll in the following four courses. They can be taken in any order, there is no predetermined sequence.
- EDUC 8100  Historical and Contemporary Issues in Literacy Research
- EDUC 8101  Theories of Literacy Research and Practice
- EDUC 8102  Literacy Research Methods
- EDUC 8103  Special Topics in Literacy Research

**Advanced Methods**  
Minimum six hours of coursework in qualitative, quantitative, and/or mixed methodologies. Courses must be graduate level and may be taken within or outside of the School of Education. For those also pursuing the Teacher Learning, Research and Practice area of emphasis, one advanced methods requirement can be met through either EDUC 8135 or EDUC 7115. Note that one of these two courses could be fulfilled in conjunction with the Cognate Requirement.

**Writing Seminar**  
EDUC 8950  Proposal and Dissertation Writing
  - or EDUC 8940  Scholarly Writing for Graduate Students

**Cognate Requirement**  
Minimum six hours taken outside of the School of Education. Choose a minimum of two courses in an area of specialization to be taken outside of the School of Education. The courses related to a student’s specialty area may be defined by discipline (e.g., linguistics, anthropology, English literature) or by focus (e.g., critical theories of race; Latinx studies; queer studies; poetry; digital humanities). Note that one of these two courses could be fulfilled in conjunction with the Advanced Methods Requirement.

**Electives**  
Minimum nine hours within the School of Education to be chosen in consultation with advisor and in context of interests and developing expertise.

**Total Credits**  
44

**Research and Evaluation Methodology**

**Specialty Seminar**  
EDUC 6925  Readings in Curriculum and Instruction
**Research and Evaluation Methodology Required Courses**  
- EDUC 6926: Readings in Research and Evaluation Methodology  
- EDUC 7326: Quasi-Experimental Design in Causal Inference in Social Sciences  
- EDUC 7386: Educational Evaluation  
- EDUC 7396: Latent Variable and Structural Equation Modeling  
- EDUC 7456: Multilevel Modeling  
- EDUC 8240: Quantitative Methods II  
- EDUC 8710: Measurement in Survey Research  
- EDUC 8720: Advanced Topics in Measurement

**Qualitative Methods**  
An additional qualitative methods course to be taken following the completion of EDUC 8260.

**Non-Education Courses**  
Minimum of six hours must be taken outside of the School of Education. Courses should be selected in consultation with your advisor and are typically at the 6000 or higher level.

**Electives**  
Minimum 12 hours within the School of Education to be chosen in consultation with advisor and in context of interests and developing expertise.

**Total Credits**  
44

**STEM Education**

**Specialty Seminar**  
- EDUC 6925: Readings in Curriculum and Instruction

**STEM Doctoral Seminars**  
- EDUC 8177: Advanced Seminar in Curriculum and Policy in Mathematics & Science Education  
- EDUC 8178: Advanced Seminar on Learning in Math & Science Education  
- EDUC 8179: Advanced Seminar in Mathematics and Science Teaching & Teacher Education

**Advanced Methods**  
Minimum six hours in either qualitative or quantitative methods. Options within and outside of the School of Education may be chosen in consultation with advisor.

**Writing Seminar**  
- EDUC 8950: Proposal and Dissertation Writing  
- COMM 6410: Discourse Analysis

**Cognate Requirement**  
Students design a pathway that best aligns with their goals. Students might, for example, select a complementary program area of study within the CU Boulder School of Education and complete the twelve (12) hours of Graduate Seminar coursework housed in that program. Or, students might select a cognate area that allows them to explore a specialty area defined by discipline (e.g., linguistics, anthropology, English literature) or by focus (e.g., critical approaches to race, class and gender; urban studies). For either of these pathways, the remaining hours might serve as Elective credits chosen in consultation with the advisor and in the context of students’ interests and developing expertise. Regardless of how the student chooses to design this element of the program, we strongly recommend that at least one course be taken outside of the School of Education. Note, too, that these credits may potentially overlap with Advanced Methods.

**Electives**  
A minimum six hours within the School of Education. Additional electives may be completed outside the School of Education in consultation with advisor.

**Total Credits**  
44
Each program area of emphasis requires a one-credit, specialty seminar course to be taken both fall and spring semesters of the first year. Additionally, first year PhD students participate in a “Professional Seminar” that meets five times each semester. This course is required to fulfill the credits earned in the fall and spring “Readings” (specialty seminar) course.

For students also pursuing the Teacher Learning, Research and Practice area of emphasis, all elective requirements will be met through the Teacher Learning, Research and Practice required seminars.

**Dissertation Credit**

All doctoral students must take a minimum of 30 dissertation hours (EDUC 8994 Doctoral Dissertation).

Students are allowed to take up to 10 hours prior to passing their comprehensive exam. Once students pass their comprehensive exam, they must be registered for a minimum of 5 dissertation hours every semester. Students may be registered for 3 hours if they are “off-campus” status, meaning they are not on appointment and are not taking any coursework hours.

Students must be registered for a minimum of 5 dissertation hours during the semester they defend.

**Publishable Paper Requirement**

In addition to coursework requirements, doctoral students should be immersed in ongoing research with faculty as early in their program as possible. All doctoral students in the School of Education (SOE) are required to complete, at a minimum, one “publishable paper” by May of their third year in the program.

Please see the School of Education Student Handbook (https://www.colorado.edu/education/student-handbook/) for more information on this requirement.

**Comprehensive Examination**

Students must schedule comprehensive examinations or “comps” with the SOE by completing an application for candidacy form and emailing soe.gradvise@colorado.edu with the names of their committee members and the date of their exam at the beginning of the semester they plan to take their comprehensive exams. Students should also request a room booking at this time. For remote examinations, the chair must set up the Zoom room for the event. The comps committee shall consist of the major advisor and two additional SOE or CU Boulder faculty members. The SOE Associate Dean of Students and the Associate Dean for Research serve as additional pro-forma (non-examining) committee members. The chair must have a regular Graduate Faculty appointment. Other committee members must have regular or special Graduate Faculty appointments. The student must be registered during the semester that the comprehensive examination is taken.

Please see the School of Education Student Handbook (https://www.colorado.edu/education/student-handbook/) for more information on this requirement.

**Proposal Committee**

Once students have successfully passed their comprehensive exam, they should consult their faculty advisor to propose their dissertation proposal committee.

The dissertation/proposal chair must be a faculty member who is rostered in the doctoral candidate’s program area who holds a regular Graduate Faculty Appointment (GFA). In the event that the doctoral candidate would like a dissertation chair from another program area, they may be invited to serve as a co-chair. Once the candidate and the dissertation advisor have agreed on the topic of the dissertation, they should proceed together to identify the full dissertation/proposal committee.

Consistent with the Graduate School's requirements, the dissertation/proposal committee must include at least five faculty:

- Three committee members (out of 5) must be CU Boulder faculty, and could all be SOE faculty members
- One committee member (out of 5) must be CU Boulder faculty, a.k.a. “outside member,” who is not an SOE faculty member
  - The Grad School defines “outside member” as someone who has a regular GFA (i.e., a CU Boulder faculty member) but is not in the student’s home department; in our School, the “home department” is the SOE.
- Up to two committee members (out of 5) could be external to CU Boulder (i.e., not faculty members at CU Boulder) as long as they have appropriate GFAs.

The Chair must have regular membership on the graduate faculty. The other members must have regular or special memberships on the graduate faculty. Note that if a student is pursuing a joint or dual-degree, at least two of the faculty must hold graduate appointments in the student’s SOE program area. Special membership, which includes faculty from other institutions, requires the approvals of the Associate Dean of Students and the Graduate School. The entire list of prospective committee members must be submitted to the Graduate Program Coordinator at soe.gradvise@colorado.edu and approved by the Associate Dean of Students at the start of the semester during which the proposal will be defended, and then re-approved at the start of the semester during which the dissertation will be defended.

Please check the deadlines sheet for dates.

Please see the School of Education Student Handbook (https://www.colorado.edu/education/student-handbook/) for more information.

**Dissertation Proposal and Oral Defense**

The dissertation proposal is a forward-looking document that outlines the doctoral candidate's proposed terrain of study through elaborating the following: a justification for the study; the conceptual framework and review of relevant literature; and the methodology. The written document should provide a clearly articulated and defensible stance, one which will provide the basis for further discussion among and planning by the proposal committee.

The dissertation proposal must describe the proposed study in sufficient detail so that members of the committee can judge the significance of the intended research and the adequacy of the planned study methods.

The oral defense of the dissertation proposal is a meeting where the candidate and five members of the committee agree to the purpose and methods of the proposed study. All members of the PhD examining
committee ("dissertation/proposal committee") are expected to participate in the proposal oral defense and sign the formal proposal examination form. After the dissertation committee members have reviewed the proposal and signed the proposal signature page it must be sent electronically to soe.gradvise@colorado.edu.

If the proposed study involves human subjects, the doctoral candidate must obtain the approval of the University of Colorado Boulder Institutional Review Board (IRB). A copy of the IRB approval of the proposed research must accompany the signed proposal signature page when it is submitted to the Graduate Programs Coordinator.

Please see the School of Education Student Handbook (https://www.colorado.edu/education/student-handbook/) for more information.

**Dissertation Committee and Final Defense**

Consistent with the Graduate's School's requirements for the final PhD examination, the dissertation/proposal committee must include at least five faculty:

- Three committee members (out of 5) must be CU Boulder faculty, and could all be SOE faculty members
- One committee member (out of 5) must be CU Boulder faculty, a.k.a. "outside member," who is not an SOE faculty member
  - The Grad School defines "outside member" as someone who has a regular GFA (i.e., a CU Boulder faculty member) but is not in the student's home department; in our School, the "home department" is the SOE.
- Up to two committee members (out of 5) could be external to CU Boulder (i.e., not faculty members at CU Boulder) as long as they have appropriate GFAs.

The Chair must have regular membership on the graduate faculty. The other members must have regular or special memberships on the graduate faculty. Note that if a student is pursuing a joint or dual-degree, at least two of the faculty must hold graduate appointments in the student's SOE program area. Special membership, which includes faculty from other institutions, requires the approvals of the Associate Dean of Students and the Graduate School. The entire list of prospective committee members must be submitted to the Graduate Program Coordinator at soe.gradvise@colorado.edu and be re-approved by the Associate Dean of Students at the start of the semester during which the dissertation will be defended.

All members of the final PhD examining committee ("dissertation committee") are expected to participate in the dissertation oral defense and sign the formal final examination form.

Doctoral candidates must deliver the final dissertation text to all committee members at least three weeks before the scheduled dissertation defense. This allows the committee two weeks to review and evaluate the dissertation. The Chair will request that committee members provide substantive feedback, preferably in writing, about the dissertation whether the document is defense-ready. If it is not ready, the candidate is given more time to work on it and the defense will be rescheduled.

Please check the deadlines sheet for dates, and the School of Education Student Handbook for more information.

After successful completion of dissertation defense, the completed dissertation must be uploaded to the Graduate School according to Graduate School procedures and deadlines. Please see the Graduate School website for deadlines details.

**Transfer Credit**

Transfer credit is defined as any credit earned at another accredited institution, credits earned on another campus of the CU system, or credits earned as a nondegree student within the CU system.

The maximum amount of work that may be transferred from another accredited institution to CU Boulder is 21 credit hours, and is accepted only after approval of the faculty advisor and the Graduate Programs Coordinator, in consultation with the Associate Dean of Students. All courses accepted for transfer must be graduate-level courses. A course in which a grade of B- or lower was received will not be accepted for transfer.

Transfer coursework must have been completed in the five years prior to acceptance to the program. Credit may not be transferred until the student has completed 6 credits of graduate-level coursework as a degree-seeking student on the CU Boulder campus with a 3.0 GPA. Students who have applicable credits to transfer to their PhD degree program must complete the transfer of credit paperwork.

**Time Limit**

The doctoral degree must be completed within six years, including defending the dissertation and submitting it to the Graduate School. A one-year extension may be granted if formally requested in writing, recommended by the student’s faculty advisor, and approved by the Associate Dean of Students and the Dean of the Graduate School. The extension request must show valid reasons as to why an extension is needed. If an extension is granted, all degree requirements must be completed within the extended time period.

**Establishing State Residency**

PhD students who move to Colorado from another state need to petition for Colorado in-state tuition classification within one year so they are eligible for in-state tuition during second year of graduate study. Proof of residency includes a Colorado driver's license and vehicle registration, voter registration, filing Colorado income taxes and proof of employment. Students should save a signed copy of their Graduate Student Assistantship offer letter to serve as proof of employment.

Detailed instructions on how to apply for Colorado residency (also called domicile) can be found on the Office of the Registrar’s State Residency webpage (http://www.colorado.edu/registrar/students/state-residency/).

**Areas of Emphasis**

**Educational Foundations, Policy and Practice**

The Educational Foundations, Policy and Practice (EFPP) program area of emphasis focuses on policy analysis and the application of academic disciplines—anthropology, history, law, philosophy and sociology—to the analysis of education. Faculty in EFPP are devoted to the critical examination of the relations among education, society, culture and government, with special emphasis on issues of equity along lines of race, ethnicity, social class, gender, sexual diversity, nationality/citizenship and intersectional inequalities.

The EFPP program area of emphasis prepares students for university faculty positions and other careers requiring deep knowledge of research.

**Equity, Bilingualism and Biliteracy**

The Equity, Bilingualism and Biliteracy (EBB) program area seeks to understand and critically respond to issues at the intersection of language, culture, ability and identity; educational and social policies; teacher preparation and teacher learning; and the social and political
contexts of schooling. This includes critical explorations of, and interventions related to, the various aspects of schooling that affect multilingual learners and their communities, such as the development of bilingualism and biliteracy, restrictive language and literacy policies, high-stakes accountability, teacher education, disproportionate representation in special education, racio-linguistic ideologies, the implementation of various bilingual education models, immigration policies and transnationalism. EBB aims specifically to prepare critical, equity- and justice-oriented researchers, teacher educators, and school, district and community leaders. Our EBB graduates go on to work and lead in universities; state, federal and local education agencies; and in school districts and community-based organizations.

Learning Sciences and Human Development
Faculty and students in the Learning Sciences & Human Development (LSHD) program study how people learn in the context of organizing for more equitable and sustainable social futures. We consider how research can inform social change that strengthens learning and teaching in K-12 schools, access to higher education for minoritized students and the sustainability of community-based education organizations. Working in partnership with schools and communities is a key component of the approach we take to understanding sociopolitical and educational issues and their possible solutions.

The LSHD program prepares graduate students to research and inform collective efforts to improve conditions of learning, particularly for young people from minoritized and marginalized communities and the adults (including teachers, community organizers and community members) who work with them. The program emphasizes:

- How a strong foundation in psychological perspectives on education and human development can inform efforts to improve conditions for learning in school and out of school contexts.
- The need to go beyond psychological perspectives to interpret learning and development in social, cultural and historical contexts.
- Social justice as a central concern in studying and informing efforts to improve conditions of learning.
- Humanistic approaches to research that draw on interpretive, critical and social practice theories of human action.

Students work with faculty members who conduct research in a range of settings, including schools, preservice teacher education programs, after-school programs, museums, community organizations, workplaces and grassroots social movements. We encourage prospective applicants to review the web pages of individual faculty to learn about current projects.

Literacy Studies
Faculty and graduate students in the Literacy Studies program study and design literacies in print and multimodal modes and in varied contexts. Literacies are framed as central to envisioning and enacting expansive and justice-centered theories and practices for teaching, learning, imagination and self-expression in K-12 schools, informal learning spaces and communities. Grounded in critical, social and interpretive conceptions of literacy, our program highlights the interrelations among theory, research, practice, policy and the potential for equitable social change.

Through multiple methodologies, research in the program occurs in partnership with children, youth, families and teachers in ways that honor and attend to experiences and identities at the intersections of race, language, gender, sexuality, ability and economic opportunity. Doctoral students collaborate with faculty on a range of research projects, engage in community outreach and work in teacher education programs emphasizing social justice and humanizing approaches to curriculum and instruction that center and address the interests and needs of all learners. The program prepares graduate students for careers in research and teaching in university settings, educational leadership in schools and community organizations and research and development in the private or nonprofit sector.

Students will have the opportunity to:

- Develop an expansive understanding of literacy and its implications for children, youth and their families and communities.
- Understand the theoretical perspectives informing literacy research currently and historically.
- Critically examine and apply research methodologies to questions of significance to them and to the field of literacy studies.
- Collaborate with faculty, peers, youth, communities and other educators to pursue research and pedagogical goals.
- Deepen their understanding of theories and practices that situate literacy as essential for dismantling systems of oppression and building toward anti-racist, anti-oppressive and affirming futures for children and youth, teachers, teacher educators, schools and communities.

Research and Evaluation Methodology
The Research and Evaluation Methodology (REM) program is a place for intellectually curious and motivated students who want to learn about deep research methodology with an eye toward influencing education policy and practice. The most common methodological specializations are:

- Psychometrics and educational assessment
- Applied statistics

The program is a full-time commitment, and all admitted students are supported with five years of funding, including tuition remission and a stipend for living expenses. Students participate in graduate research assistantships each semester and can expect to work with faculty on research projects as part of CADRE (http://www.colorado.edu/cadre/cadre-projects-and-resources/), the Center for Assessment, Design, Research and Evaluation.

STEM Education
The STEM Education program offers students an opportunity to build their understanding and expertise in STEM Education. The faculty in the STEM program area have expertise in science, mathematics and computer science in pre-college learning environments with a special focus on diversity and justice. The program supports students in becoming educational researchers through participation in the doctoral cohort and STEM specific coursework. Students develop an understanding of how learning environments can be designed to foster students’ understanding of and participation in mathematics, science and STEM. Our faculty work with collaborators throughout campus and in partnership with teachers, schools, districts and community members. As part of their studies, PhD students have opportunities to work on funded research projects, teach courses and contribute to ongoing work of multiple CU centers. The PhD prepares students for careers in research and teaching in university settings, educational and public leadership and services to schools, or research and development in the private or nonprofit sectors.

The STEM Education program is centered on and takes an interdisciplinary stance to:
Learning beyond cognitive change towards participation in sociopolitical learning environments that involve issues of identity and power.

• Collaboration with teachers, public schools and community organizations as partners in broadening and re-envisioning STEM education to include more humanizing experiences and outcomes.

• Recognition that current values and traditions of STEM disciplines need to be de-settled to expand what counts as knowing and to be a knower.

• Exploration of the generation of knowledge among learning communities of all types and the negotiation of shared visions and integrity among their members.

• Building and studying programs that engage and sustain learners and their communities through engagement in meaningful and relevant STEM questions.

• Youth empowerment and agency by drawing on scientific knowledge and practices to explore meaningful questions in their communities.

Teacher Learning, Research and Practice
The Teacher Learning, Research & Practice (TLRP) program offers a rigorous pathway for those interested in becoming teacher educators who conduct research and support the practice of teaching and teacher education. The TLRP program takes seriously this hybrid role of teacher educator as both researcher and practitioner, as well as the historical legacy of inequalities perpetuated by teacher education. This program prepares graduate students for careers as researchers and teachers in university settings with a particular emphasis on equity and justice, as educational leaders in schools and community organizations, and as researchers and developers in private and nonprofit sectors.

The TLRP program is grounded in a commitment to the practice, study and transformation of teacher education in ways that forward and honor humanizing thinking and action. Doctoral students enjoy opportunities to work in and with the school's multiple teacher education programs and to collaborate with faculty, doctoral students and other stakeholders (e.g., school partners; community organizations) in the critical design and study of these programs. Conducting research with members of this community provides additional opportunities to deepen understandings from coursework and to pose and pursue questions using innovative research methodologies and methods.