Counselor Education

Chair

• Noel Estrada-Hernandez

Undergraduate minor: human relations
Graduate degrees: M.A. in counselor education; Ph.D. in counselor education
Faculty: https://education.uiowa.edu/directory
Website: https://education.uiowa.edu/about/administration/department-counselor-education

Courses

Counselor Education Courses

CSED:1029 First-Year Seminar 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

CSED:1030 Belin-Blank Center Seminar 1 s.h.
Presentations and discussions by University resource experts and Belin-Blank Center for Gifted Education staff. Requirements: Belin-Blank Center student.

CSED:2081 Making a Vocational-Educational Choice 2-3 s.h.
Vocational decision-making process, self-evaluation, exploration of the world of work; for students who are uncertain about their educational and vocational goals.

CSED:2090 Parenting and Family Life 3 s.h.
Parenting and family life with fathers who are currently incarcerated; enhancement of ongoing relationships with children and family; emphasis on assisting a father's relationship with his family with co-parenting strategies, nonviolent discipline, caring parenting styles, and behavioral management to foster successful child development; strategies for maintaining relationships with children and families; communication skills, building trust, positive discipline, behavioral management, conflict management, and positive visitation strategies. Requirements: Iowa Medical and Classification Center inmate.

CSED:4109 Introduction to Athlete Mental Health 3 s.h.
Overview of athlete mental health with emphasis on support services for high school and collegiate student-athletes as well as professional athletes; introduction to key players/stakeholders, ethical considerations, potential career paths for those pursuing careers in this industry, and importance of addressing mental health needs of athletes at all levels of sport participation.

CSED:4110 Psychology of Food and Mood 3 s.h.
Neurobehavioral and psychological determinants of food preference, behavior, and mood management; cultural meanings of food in North America, obesity, dieting, disordered eating; how we use food as a means of managing or damaging our food and health.

CSED:4111 Building Leadership and Success at Work 3 s.h.
Students learn and apply leadership components and skills to meet and exceed employer expectations; development of skills to evaluate and match student's interests with company leadership styles; effective use of leadership behaviors to influence, communicate, motivate, work in teams, and manage conflict; students gain understanding of self-identity; creation of an individualized leadership plan to use in career and personal life.

CSED:4112 How to Interview to Get That Job! 3 s.h.
Two approaches to job interviews—how to interview applicants for a job; students gain knowledge and skills necessary to successfully conduct interviews from applicant and employer perspectives; review of interview processes and legal and ethical boundaries within interviews; examination of interview formats and styles to gain confidence and successfully respond to typical interview questions; development of interview questions as an applicant and as an employer; communication best practices prior, during, and following an interview.

CSED:4113 Sleep, Sleep Deprivation, and Sleep Disorders 3 s.h.
Theories and stages of sleep; aging and normal sleep; impact of sleep and sleep deprivation on mental and physical health; overview of sleep disorders and treatments.

CSED:4114 Psychology of Body Modification and Self-Image 3 s.h.
Exploration of psychology and practices of body modification as related to self-image; dynamic relationship between body and identity; body modification accomplished in many ways and for many reasons (beauty, social status, religious expression, improve function, to rebel); how gender, race, culture, age, and health shape our attitudes about our bodies and our decision to make modifications; risks and benefits (physical, emotional, social) of making a body modification to one's sense of self as it relates to others and to oneself.

CSED:4115 Developing Ethical Awareness and Decision Making Through Virtual Environments 3 s.h.
Introduction to ethical and decision making models using experiential activities in a virtual world; development of role playing characters in the PC-based virtual world of Skyrim; students face a multitude of ethical dilemmas, personal situations that explore participants' value systems, and decisions to be made in different contextual environments; review of several ethical models including developmental perspectives, approaches to ethical decision making, values scales, and moral development models which are applied to reflective writing activities and case presentations.

CSED:4119 Family Issues in Giftedness 1 s.h.
Family dynamics and issues that arise when one or more children are identified as gifted; parent/child, sibling, school/family relationships.

CSED:4120 Psychology of Giftedness 3 s.h.
Theories of learning, child development, motivation; issues unique to gifted education. Same as PSQF:4120.

CSED:4121 Identification of Students for Gifted Programs 3 s.h.
Interpretation of standardized tests and other measurement instruments used to identify academic talent and program effectively for grades K-12; ability, aptitude, achievement tests; current issues in the uses of various instruments. Same as PSQF:4121.
CSED:4123 Gender Issues and Giftedness  1 s.h.  
Effect of gender on development of giftedness; differential needs of girls, boys; strategies for effective teaching, gender equity.

CSED:4124 Ethnic and Cultural Issues and Giftedness  1 s.h.  
Effect of ethnicity and culture on development of giftedness; special needs of Black, Hispanic, Native American, and Asian gifted students; strategies for identification, programming.

CSED:4125 Counseling and Psychological Needs of the Gifted  1 s.h.  
Psychological aspects of giftedness, counseling techniques appropriate for gifted children, adolescents; socio-emotional concerns, career development, underachievement. Same as PSQF:4125.

CSED:4126 Cognitive and Affective Needs of Underachieving Gifted  1 s.h.  
Diagnostic strategy for identifying types of underachievement, teaching and counseling interventions appropriate for each. Same as PSQF:4126.

CSED:4128 Advanced Leadership Seminar in Gifted Education  1 s.h.  
Development of administrative policies and programming based on empirical research; for experienced leaders in gifted education.

CSED:4129 Creativity: Issues and Applications in Gifted Education  1 s.h.  
Theories that underpin contemporary definitions of creativity; instruments developed to measure creativity; activities in the school environment that enhance or inhibit student creativity. Same as PSQF:4129.

CSED:4130 Human Sexuality  3 s.h.  
Introduction to human sexuality from a sociocultural perspective; readings and discussions of sensitive topics and explicit depictions/discussions of sexuality; students may relate their sexual experiences to course content; combination of formats.

CSED:4131 Loss, Death, and Bereavement  3 s.h.  
Psychological study of death, grief, loss, bereavement, and coping from a multidimensional and multidisciplinary perspective; loss and grief as natural experiences that are not often explicitly discussed; overview of topics relating to death; including multicultural attitudes toward death, death practices, theories on loss and bereavement, and grieving throughout the life cycle; hospice and palliative care, suicide, and making meaning of life out of death; development of critical thinking skills by engaging in empirically based discussions.

CSED:4132 Introduction to Addictions and Impulse Control Disorders  3 s.h.  
Exploration of addictions and impulse control disorders; legal, social, physical, and emotional issues related to addictions and impulse control disorders.

CSED:4137 Introduction to Educating Gifted Students  3 s.h.  
Fundamental issues such as curriculum, counseling, family issues, gender and minority issues. Same as EDTL:4137.

CSED:4140 Foundations of Leadership for Community Agencies  3 s.h.  
Preparation to become effective employees and leaders; emphasis on leadership roles in clinical and other human service or health care settings; how leadership transcends job title associated with high work performance; experiential activities that illustrate key didactic concepts and didactic lecture review, written assignments, experiential assignment, in-depth discussions illustrating key concepts.

CSED:4141 Helping Skills for Community Settings  3 s.h.  
Helping skills necessary for working in a variety of community settings; focus on communication, problem solving, interviewing skills, entry-level techniques (e.g., mindfulness), and résumé building opportunities including Iowa mandatory reporter training and QPR (Question, Persuade, and Refer) training.

CSED:4145 Marriage and Family Interaction  3 s.h.  
Contemporary American couple, marriage, and family relationships; mate selection. Same as PSQF:4145.

CSED:4162 Introduction to Couple and Family Therapy  3 s.h.  
Evolution of the family therapy movement and issues related to functional and dysfunctional family systems; significant models of family therapy and specific techniques. Same as PSQF:4162.

CSED:4173 Trauma Across the Lifespan  3 s.h.  
Current theory and practice models related to trauma and crisis intervention; overview of multi-system level definitions of trauma experience (historical, individual, interpersonal, family, organizational, community, global); various approaches to trauma response theory; unique contributions that counselors offer (strength, resiliency, coping); commitments to multicultural and systems factors; macro- to micro-level understanding of trauma.

CSED:4174 Positive Psychology  3 s.h.  
Promotion of human potential as a focus for counseling professionals that provides a supplement to diagnosis and treatment of pathology; how to achieve happiness, resilience, wellness, and life satisfaction through enhancement of human strengths and virtues.

CSED:4175 Motivational Interviewing  3 s.h.  
Motivational Interviewing (Miller & Rollnick) and the stages of change model.

CSED:4176 Child Abuse: Assessment, Intervention, and Advocacy  3 s.h.  
Preparation for work involving abused children or child abuse issues; appropriate for careers in counseling, education, health sciences, law, psychology, social work, and so forth; interactive approach.

CSED:4178 Microcounseling  3 s.h.  
Basic skills of listening, responding, empathy, focus; advanced skills of meaning, confrontation, reframing, directives, action skills.

CSED:4179 Sexuality Within the Helping Professions  3 s.h.  
Relationship between sexuality and mental health; varied ethical and professional issues in sex therapy.

CSED:4180 Topical Seminar for Helping Professionals  arr.  
Topics for the continuing education of counselors and related professionals.
CSED:4185 Introduction to Substance Abuse 3 s.h.
Theories of addiction and pharmacology of psychoactive drugs; legal, familial, biological, multicultural, historical issues related to substance use and misuse.

CSED:4187 Introduction to Assistive Technology 3 s.h.
How assistive technology can be used for attainment of goals in education or work. Same as EDTL:4987.

CSED:4188 Practicum in Teaching and Curriculum Development in Gifted Education 1-6 s.h.
Experience in developing course materials for classes offered through the Belin-Blank Center for Gifted Education. Same as EDTL:4188.

CSED:4191 Advocacy: Awareness, Assertiveness, and Activism arr.
Introduction to advocacy skills—communicate, convey, negotiate or assert interests, desires, needs, and rights for self or others; opportunity to design and implement a plan of change; ecological model of human interaction that suggests a person must be viewed within context of one’s environment(s); how having power on a personal and social level impacts one’s environment and is central to a person’s well-being; advocacy as a central function of helping professions.

CSED:4193 Individual Instruction - Undergraduate arr.

CSED:4194 Interpersonal Effectiveness 3 s.h.
Paradigms and techniques that enhance interpersonal relationship skills.

CSED:4195 Ethics in Human Relations and Counseling 3 s.h.
Morality and ethics; ethical issues; models and techniques for effective ethical decision making in personal and professional interactions.

CSED:4197 Citizenship in a Multicultural Society 3 s.h.
Human relationships in the context of societal oppressions such as racism, sexism, able-bodyism, and heterosexism.

CSED:4199 Counseling for Related Professions 3 s.h.
Counseling theories and techniques; ethical and multicultural considerations; small-group discussions, demonstrations, lectures.

CSED:5200 Professional School Counselor 3 s.h.
Professional identity of school counselors, K-12 school counseling program delivery systems, legal and ethical issues.

CSED:5202 Introduction to Group Counseling 3 s.h.
Research, theory, ethics, planning, and practice in group counseling; leadership styles and multicultural considerations; group participation. Requirements: counselor education enrollment.

CSED:5203 Career Development and Counseling 3 s.h.
Preparation for counselors and student affairs professionals; career development concepts and theories, family and work, career counseling goals and objectives, exemplary techniques and materials, career program planning, evaluation procedures. Requirements: counselor education enrollment.

CSED:5204 School Culture and Classroom Management for School Counselors 3 s.h.
American public elementary and secondary schools and the school counselor’s role; classroom management for school counselors.

CSED:5221 Theories of Counseling and Human Development Across the Life Span 3 s.h.

CSED:5222 Counseling Children and Adolescents in Schools 3 s.h.
Theory and practice of school-based counseling interventions; child and adolescent development; prevention; special topics. Prerequisites: CSED:5221 or CSED:5278.

CSED:5226 Assessment of Giftedness 3 s.h.
Training and practice in assessment of gifted children. Same as PSQF:5226.

CSED:5230 School Counseling Program Leadership and Management 3 s.h.
Comprehensive K-12 school counseling program components and structures; program leadership, planning, accountability; behavioral consultation and collaboration; ethical, multicultural, family considerations.

CSED:5237 Seminar in Gifted Education 2-3 s.h.
Teaching and counseling needs of gifted students K-12; intensive 10-day residential program. Requirements: work as teacher with Belin Fellowship.

CSED:5238 Advanced Seminar in Gifted Education 1 s.h.
Supervisory, administrative, and research issues; fellowships for seminar participants.

CSED:5241 Professional Counseling Orientation and Ethical Practice 3 s.h.
Historical, philosophical, legislative, societal, and multicultural overview of mental health process and practice in community-based settings; roles of rehabilitation and mental health professionals, nature of agencies, resources, contemporary issues, and ethics.

CSED:5248 Diagnosis and Treatment Planning for Traditional, Vulnerable, and Special Populations in Counseling 3 s.h.
Individual and group approaches to assessment and evaluation, including personal and environmental factors; psychiatric conditions, their diagnostic criteria using the DSM-5, and treatment planning considerations; biospsychosocial and psychiatric rehabilitation models used for case conceptualization and treatment planning, including functional assessment and client-driven rehabilitation planning for community reintegration; special considerations for diagnosing and treating vulnerable and special populations. Requirements: counselor education enrollment.

CSED:5249 Medical and Psychopathological Aspects of Chronic Illness and Disability 3 s.h.
Description, classification, and theoretical perspectives related to psychiatric disorders; models of intervention in community-based settings.

CSED:5250 Multiculturalism in Helping Professions 3 s.h.
Theory and application of multicultural competency in the helping professions; ethical treatment of clients in the context of a multiculturally diverse society; knowledge, skill, self-awareness components relevant for helping practitioners. Requirements: counselor education enrollment.
CSED:5253 Forensic Rehabilitation and Case Management 3 s.h.
Orientation to the profession of forensic rehabilitation or forensic vocational rehabilitation; development of knowledge and skills to act as a forensic professional in court proceedings involving persons with disabilities; emphasis on multiple areas of practice including social security determination, marital dissolution, personal injury, worker’s compensation, and life care planning; students write expert testimony reports from assigned scenarios of injured workers for attorneys, insurance carriers, and administrative law judges.

CSED:5254 Assessment and Appraisal 3 s.h.
Presentation of materials related to assessment and appraisal for those who plan to work as professional counselors; didactic and experiential activities that enhance a counseling professional’s work in the field; specifically, development of skills related to the administration, scoring, and interpretation of basic assessment materials and appraisal in a counseling setting.

CSED:5270 Issues and Ethics in Counseling 3 s.h.
Ethical standards and decision making; current issues; ethical, legal, and multicultural considerations for counseling in agencies and schools; emphasis on professional practice.

CSED:5278 Applied Microcounseling 3 s.h.
Development of basic and advanced counseling skills; preparation for work in education and community settings.

CSED:5280 Topical Seminar in Counselor Education arr.
Special topics dealing with contemporary problems of concern to counselors in specific settings.

CSED:5300 Culturally Relevant Social and Emotional Learning 3 s.h.
Social-emotional learning (SEL) focuses on development of student competence in recognizing and managing emotions, developing empathy, making decisions, building relationships, and handling challenging situations; evidence on the impact of effective SEL has driven the introduction of state K-12 SEL standards and competencies; beyond applying principles of SEL, teachers need equitable instructional practices to link principles of learning with an understanding and appreciation for culture; examination of intersection of SEL and culturally relevant pedagogy (CRP); principles and applications of culturally relevant SEL in K-12 schools. Requirements: M.A. in teaching, leadership, and cultural competency program enrollment.

CSED:5400 Suicide and Crisis Intervention in Counseling 3 s.h.
Content related to suicide and crisis intervention work; students encounter many crisis situations in a variety of settings as future counselors and the importance of feeling prepared to engage in these situations; students often become leaders within their settings to carry out interventions; theoretical perspectives and techniques in crisis intervention and crisis counseling; history, models, current trends, and systemic issues of crisis counseling.

CSED:5263 Consultation Theory and Practice 3 s.h.
Review of concepts and practice of consultation and collaboration in educational and human services settings; focus on mental health, organizational, behavioral, and instructional models. Same as PSQF:6263.

CSED:5293 Individual Instruction - Graduate arr.

CSED:6300 Practicum in School Counseling 3 s.h.
Supervised experience counseling and consulting in elementary and secondary school settings. Requirements: completion of school counseling core courses.

CSED:6321 Internship in Elementary School Counseling 6,12 s.h.
Supervised placement in an elementary school setting; performance of tasks, responsibilities of an elementary school counselor. Prerequisites: CSED:6300. Requirements: completion of all required school counseling courses.

CSED:6322 Internship in Secondary School Counseling 6,12 s.h.
Supervised placement in a secondary school setting; performance of tasks, responsibilities of a secondary school counselor. Prerequisites: CSED:6300. Requirements: completion of all required school counseling courses.

CSED:6341 Occupational Information, Job Development, and Job Placement 3 s.h.
Obtaining appropriate jobs for individuals with disabilities who have received rehabilitation services; client, counselor, employer, job specifications.

CSED:6342 Psychosocial Aspects of Health and Disability Across the Developmental Lifespan 3 s.h.
Dynamics of adjustment and coping for persons with chronic illness or those with disabilities through the life span; somatopsychological, psychosocial, and developmental perspectives on disability.

CSED:6345 Winterim Session Field Experiences in Counseling arr.
Clinical experiences in mental health or rehabilitation agencies; supervision by faculty supervisor, site supervisor, and doctoral student in individual, triadic, and group formats; consultation between students, faculty supervisors, and site supervisors includes supervision and performance evaluation. Prerequisites: CSED:6346 or CSED:6349 or CSED:7360.

CSED:6346 Practicum in Rehabilitation Counseling 3 s.h.
Clinical preparation to work specifically with persons with mental health and other disabilities in order to effectively promote positive changes in their employment status (where applicable), level of social integration, level of independence, quality of life, and mental health; individual clinical preparation goals established within the parameters of the clinical continuum to ensure skill development and a strong knowledge base, which serve to promote qualified providers of rehabilitation counseling services.

CSED:6347 Internship in Rehabilitation Counseling arr.
Advanced clinical experiences under faculty supervision in a community rehabilitation agency; student interns receive weekly individual and monthly group supervision; emphasis on application of rehabilitation and mental health counseling and case management methods, techniques, and vocational knowledge in work with clients; consultation with professionals, business, and industry as needed to enhance services to persons with disabilities for the purposes of job development/placement and/or independent living rehabilitation. Prerequisites: CSED:6346.

CSED:6349 Practicum in Clinical Mental Health Counseling arr.
Experience in a community agency serving individuals with disabilities and mental health disorders, supervised by a certified rehabilitation counselor in an approved site. Prerequisites: CSED:6353.
CSED:6352 Internship in Clinical Mental Health Counseling  arr.
Full-time clinical experience in rehabilitation and mental health settings; training in wide range of rehabilitation and mental health functions under supervision of a qualified M.A. counselor with appropriate credentials. Prerequisites: CSED:6349.

CSED:6353 Pre-Practicum and Case Management in Counseling  3 s.h.
Development of accurate listening, empathy, reflection, and inquiry skills as well as goal setting techniques that are the foundation of counseling work; strong applied and experiential approach with special focus on development of self-awareness dexterity necessary for professionals in clinical mental health counseling; students learn and practice microcounseling skills in class and lab sessions that relate to working with individuals and small groups; applied pre-practicum allows students to work with an analog client as well as didactic instruction.

CSED:6354 Advanced Practicum in Clinical Mental Health Counseling  3 s.h.
Advanced clinical experiences in clinical mental health counseling; supervision provided by faculty supervisor and site supervisor, who meet with the student during the semester for supervision and performance evaluation; emphasis on application of clinical mental health counseling knowledge, methods, and techniques in work with clients, and in consulting with other professionals and agencies as needed to enhance services to persons with mental health disabilities; emphasis also on application of principles and professional standards to real life situations. Prerequisites: CSED:6353 and CSED:6349.

CSED:6394 Research and Scholarship Internship 1-3 s.h.
Preparation for comprehensive examination.

CSED:6500 Research and Program Evaluation  3 s.h.
Introduction to research methods for counselors; research strategies that have dominated counseling literature; key concepts related to development of researchable questions, use and interpretation of quantitative and qualitative analyses, factors impacting design integrity, and use of findings to effect counseling program modifications; focus on essential approaches needed to conceptualize and develop a research proposal.

CSED:7255 Advanced Career Development and Counseling  3 s.h.
Major concepts and research evidence about life-span vocational behavior; theories of vocational choice, adjustment, development in a multicultural world.

CSED:7338 Essentials of Qualitative Inquiry  3 s.h.
Principles, processes of qualitative research in education; methods of design, data collection and analysis, interpretation, trustworthiness. Requirements: Ph.D. enrollment and introductory research course.

CSED:7347 Home/School/Community: System Interventions  3 s.h.
Interventions used by school and support system personnel; focus on work with parents, siblings. Same as PSQF:7347.

CSED:7353 Advanced Counseling and Psychotherapy  3 s.h.
Theories, techniques, and ethics of counseling clients with personal and interpersonal problems; ethical and multicultural considerations.

CSED:7360 Advanced Practicum in Counseling  arr.
Supervised practice in counseling; intensive analysis of counselor ethics, styles, and methods. Requirements: Ph.D. enrollment, advanced graduate standing in counselor education, and counseling introductory practicum.

CSED:7380 Internship in Teaching  arr.
Supervised college teaching experience in counselor education courses; teaching in collaboration with faculty, observation and critiques of teaching, participation in course planning and evaluation procedures; ethical and multicultural considerations.

CSED:7385 Teaching and Learning in Higher Education  3 s.h.
Current theoretical and empirical literature on teaching and learning in higher education; focus on development of effective teaching practice. Same as EDTL:7385, EPLS:7385, GRAD:7385, PSQF:7385.

CSED:7400 Seminar: Ethics and Issues in Counseling  3 s.h.
Ethical, professional, and contemporary issues in counseling practice, education, and research. Requirements: counselor education Ph.D. enrollment.

CSED:7438 Advanced Qualitative Research Seminar in Counselor Education  3 s.h.
Exploration of qualitative research at advanced theoretical, practical, and technical level, inside and outside a typical classroom environment; scholarly discussions. Prerequisites: CSED:7338.

CSED:7448 Integrated Developmental Theory and Counseling  3 s.h.
Advanced issues, theoretical perspectives, and research in human development across the life span; influential theories in human development; related implications for counseling, supervision, and research; integrated understanding of perspectives through position papers, reflection papers, and research proposal project. Requirements: graduate standing in counselor education.

CSED:7450 Advanced Social Psychology of Disability  3 s.h.
Disability issues from individual and societal perspectives; psychosocial aspects of disability and disability studies; seminar. Requirements: Ph.D. enrollment.

CSED:7451 Advanced Multiculturalism  3 s.h.
Impact of culture, race, ethnicity, and intersections of identity on counseling in higher education and student affairs settings. Prerequisites: CSED:5250.

CSED:7454 Supervision Theory and Practice  3 s.h.
Conceptual models, ethics, multicultural considerations, research, and program design for counselor supervision and consultation.

CSED:7455 Internship in Supervision  arr.
Supervision of students enrolled in counseling practicum. Prerequisites: CSED:7454.
CSED:7457 Seminar: Professional Orientation to Counselor Education, Supervision, Leadership, and Advocacy  
4 s.h.
Professional orientation for students seeking degrees and employment in counselor education and supervision (CES); analysis of by-laws, competency statements, and professional responsibilities for specialists in CES; identification of key leadership practices; evaluation of leadership principles as applied to CES; development of a plan for future leadership in CES; students analyze needs of client stakeholder groups, evaluate current approaches to advocacy, develop an advocacy plan, and examine their own professional awareness, knowledge, and skill sets for negotiating work/life in academia and/or administration.

CSED:7458 Seminar: Issues and Trends in Counseling Research  
4 s.h.
Recent trends, including debates and findings in literature related to best practices for the profession. Same as PSQF:7459.

CSED:7460 Seminar: Research in Counseling  
3 s.h.
Methods, examples, ethics, multicultural issues, problems of counseling research. Requirements: Ph.D. enrollment. Same as PSQF:7460.

CSED:7461 Practicum in Research  
arr.
Experience designing and implementing research relevant to student's plan of study, under supervision of counselor education faculty member.

CSED:7465 Internship in Clinical Practice  
arr.
Supervised experience in professional counseling, counselor supervision, consultation, and teaching counseling.

CSED:7466 Leadership and Advocacy Internship in Counselor Education  
3 s.h.
Supervised experience in service learning activities in a variety of settings to build advocacy and leadership skills; leadership skill development opportunities that enhance doctoral students' future potential as counselor education advocates and consultants. Prerequisites: CSED:7360.

CSED:7493 Ph.D. Thesis  
arr.