

## Education: Special Education (EDSP)

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### EDSP 422 COLLABORATIVE PARTNERSHIPS AND SPECIAL EDUCATION (4)

Candidates are presented with theory, concepts, and practices related to the implementation of special education services for students with disabilities and their families. Foundational knowledge on the identification of disabilities, service delivery models, and the legislative framework that mandates key special education practices are explored. Additional emphasis is placed on the communication, consultation, and collaboration skills useful in forming productive partnerships with families, school personnel, and community service providers. Coursework and field assignments are integrated to support the development of a personal philosophy of special education that links theory to practice. Grade only. Prerequisite: Admission to the Education Special Credential program or by permission of the instructor.

### EDSP 423 ASSESSMENT, CURRICULUM, AND INSTRUCTIONAL STRATEGIES FOR STUDENTS WITH DISABILITIES (4)

Candidates explore the basic principles and strategies of assessment, curriculum, and instruction that are appropriate for individuals with diverse special education needs. Candidates learn to assess student needs utilizing a variety of formal and informal assessments and to develop appropriate goals and learning objectives based on assessment findings. The linkage between assessment, curriculum, and instruction is emphasized, including monitoring of student learning. Legal, ethical, and diversity issues related to assessment are explored. Eligibility criteria and characteristics of students with disabilities are also a focus of this course. Grade only. Prerequisite: Admission to the Education Specialist Credential program or by permission of the instructor.

### EDSP 424 CLASSROOM ECOLOGY: MANAGEMENT, DISCIPLINE, AND BEHAVIORAL SUPPORTS (4)

EDSP 424 provides candidates with an overview of both class-wide and individual classroom behavior management. Theories and philosophies of creating classroom ecologies, management strategies, discipline and behavioral supports are considered to inform how special educators teach and enforce pro-social behavior for all students. Functional assessment and analysis are used to develop positive behavior support plans for children with more significant behavior needs. The goal of this course is to help candidates learn to promote the social competence, self-management, and communication skills of students with special needs through behavior support. Grade only. Prerequisite: Admission to the Education Special Credential program or by permission of the instructor.

### EDSP 425 DEV ACAD PERFORMANCE-MILD/MODERATE (4)

EDSP 425 is designed to provide candidates in the Education Specialist mild to moderate disabilities credential program with a research-based perspective on developing academic performance for students with mild to moderate disabilities. The relationship among assessment, curriculum, and instruction is investigated through the examination and application of a variety of informal assessments, instructional strategies, and curricula within the context of access to the core curriculum and content standards. Curricular modifications and instructional strategies that support students with mild/moderate disabilities in inclusive settings are explored. Coursework follows a "theory into practice" format consisting of classroom simulations, visitations, guided activities, and student projects using field-based lessons. Grade only. Prerequisite: Admission to the Education Special Credential program or by permission of the instructor.

### EDSP 433 TEACHING ADOLESCENTS WITH SPECIAL EDUCATION NEEDS (3)

EDSP 433 is an introductory course which presents a survey of theory, program concepts, and teaching practices related to students with special needs. Emphasis is placed on understanding and addressing the educational and social needs of secondary-aged students with disabilities as well as gifted and talented students. Legislation, policies, and practices pertaining to the education of students with special needs in a secondary setting are presented. Knowledge, skills, and strategies including disability and gifted and talented identification; major roles and responsibilities in the Individual Education Program (IEP) process and collaboration between general and special educators aimed at successful inclusive educational practices are also addressed. 30 hours of field experience are included. Elements of this course will include the use of the Internet and the World Wide Web.

### EDSP 464A PARTICIPANT OBSERVATION (2)

Provides an early fieldwork experience for education specialist credential candidates not currently working in special education as Interns. Candidates become acquainted with the daily operation of a special education classroom within the context of the school and the community. 90 hours observation and participation in a special education classroom during which the candidate observes curriculum, instruction, classroom ecology, IEP meetings, and assessment. Cr/NC, Prerequisite: Admission to Education Special Credential program. Requires concurrent enrollment in EDSP 464B.

### EDSP 464B PARTICIPANT OBSERVATION: SEMINAR (2)

This seminar, to accompany EDSP 464A, allows candidates to discuss and evaluate their experiences observing in special education classrooms, with a focus on the social context of the classroom, school, and community. The roles of specialists and others working in collaboration with the special educator are investigated and links between theory and practice are explored. Grade only. Prerequisite: Admission to the Education Special Credential Program. Required concurrent enrollment in EDSP 464A.

### EDSP 465 PRACTICUM:MILD/MODERATE DISABILITIES (10)

EDUC 465 represents the student teaching component of the Mild/Moderate Disabilities credential program. Student teaching is a culminating experience that must occur in the final semester of the program. Credential candidates student teach for 12 weeks under the guidance and supervision of a duly selected master teacher in the schools as well as a university supervisor from Sonoma State University. Student teaching sites are selected to reflect current prevailing practices in the education of learners with mild or moderate disabilities. Thus, resource specialist programs, special day classes, transitional classes, inclusion programs, and "non-public schools" certified by the California Department of Education all represent possible placement sites for student teachers. Candidates may receive student teaching credit for assignments where they are also the "teacher of record," or otherwise employed, contingent on suitable supervision and guidance availability on-site. Cr/NC only. Prerequisites: Admission to the Education Specialist Mild/Moderate Disabilities credential program, and EDUC 422, EDUC 423A, EDUC 424A. Corequisite: EDUC 466.

#### EDSP 466 SEMINAR:MILD/MODERATE DISABILITIES (2)

EDUC 466 represents the seminar which accompanies the student teaching component of the Education Specialist Mild/Moderate Disabilities Credential program. The seminar is designed to provide a problem-solving forum for the myriad of educational, social, and psychological issues which tend to arise as part of student teaching. Guidance and support aimed at a successful student teaching experience is offered through EDUC 466. In addition to the instructor of EDUC 466, occasional guest visits by student teaching supervisors, resident teachers, and school administrators will complement the class sessions. Candidates will also be provided time to form cooperative support groups around commonalities of assignment or problem areas. Cr/NC only. Prerequisites: Admission to the Education Specialist Mild/Moderate Disabilities Credential program, EDUC 422, EDUC 423A, EDUC 424A. Corequisite: EDUC 465.

#### EDSP 467 PRACTICUM:MODERATE/SEVERE DISABILITY (10)

EDSP 467 represents the student teaching component of the Education Specialist Moderate/Severe Disabilities Credential program. Student teaching is a culminating experience that must occur in the final semester of the program. Credential candidates student teach for 12 weeks under the guidance and supervision of a duly selected master teacher in the schools as well as a university supervisor from Sonoma State University. Student teaching sites are selected to reflect current prevailing practices in the education of learners with moderate or severe disabilities. Thus, resource specialist programs, special day classes, transitional classes, inclusion programs, and "non-public schools" certified by the California Department of Education all represent possible placement sites for student teachers. Candidates may receive student teaching credit for assignments where they are also the "teacher of record," or otherwise employed, contingent on suitable supervision and guidance availability on-site. Cr/NC only. Prerequisites: Admission to the Education Specialist Moderate/Severe Disabilities credential program, and EDUC 422, EDUC 423A, EDUC 424A. Corequisite: EDUC 468.

#### EDSP 468 SEMINAR:MODERATE/SEVERE DISABILITIES (2)

EDUC 468 represents the seminar that accompanies the student teaching component of the Education Specialist Moderate/Severe Disabilities Credential Program. The seminar provides a problem-solving forum for the myriad of educational, social, and psychological issues which tend to arise as part of student teaching. Guidance and support aimed at a successful student teaching experience is offered through EDUC 468. In addition to the instructor of EDUC 468, occasional guest visits by student teaching supervisors, resident teachers, and school administrators will complement the class sessions. Candidates will also be provided time to form cooperative support groups around commonalities of assignment or problem areas. Cr/NC only. Prerequisites: Admission to the Education Specialist Moderate/Severe credential program, EDUC 422, EDUC 423A, EDUC 424A. Corequisite: EDUC 467.

#### EDSP 481 INTERN PRACTICUM/SEMINAR (4)

This course provides on-going support and guidance to Intern teachers serving diverse learners with special needs. The course focuses on examining the California Standards for the Teaching Profession and connecting these standards with university course work and Intern's teaching experience. This is a hybrid course in which teachers meet in a seminar format (face-to-face) and in an online format. The course focuses on problem solving using the standards, university courses, and individual teaching experiences as frames of reference. Learning from and supporting other interns by sharing individual teaching experiences is the major emphasis of this course as well as offering support in developing the program portfolio. In addition to the seminar, the practicum will provide support and guidance to interns in their classrooms. On-site support teachers and university faculty will visit teacher's classrooms, conference with teachers about their needs, observe classroom practices, and provide feedback on observations.

#### EDSP 495 SPECIAL STUDIES (1-4)

##### EDSP 511 PROFESSIONAL INDUCTION PLAN: SUP DEV (1)

EDUC 511 is the initial course in the Professional Level II Education Specialist Credential program. This course offers a forum for the development of an individualized plan for the induction of new special education teachers into the profession of Special Education. The Individual Learning Plan developed during Preliminary Level I forms the basis for development of the induction plan. The Professional Induction Plan is developed in response to the new teachers' areas of professional needs and interests. It is developed by the candidate with University faculty, school district mentors/ support providers, and other teachers. Cr/NC only. Prerequisite: Admission into the Professional Level II Education Specialist Credential program.

##### EDSP 512 ADVANCED ISSUES IN ASSESSMENT, CURRICULUM, AND INSTRUCTION FOR STUDENTS WITH DISABILITIES (3)

EDUC 512 is part of the Professional Level II Education Specialist Credential program. Foundational knowledge in assessment, curriculum, and instruction is extended within EDUC 512. Candidates gain advanced skills in planning, conducting, reporting, and utilizing a variety of assessments, and in integrating assessment results into instructional planning. Issues such as assessment bias and research, law, and policies and procedures pertaining to the assessment process are addressed. Broad curricula areas including vocational development and community living preparation, diverse instructional approaches, and educational technologies are also addressed. Adaptation and modification of assessment, curriculum, and instruction to meet the individual needs of students with disabilities is a course focus. Prerequisite: Admission into the Professional Level II Education Specialist Credential Program.

##### EDSP 513 CURRENT AND EMERGING RESEARCH AND PRACTICE IN SPECIAL EDUCATION (3)

EDUC 513 is part of the Level II Education Specialist Credential program. The course will critically examine emerging research on varied issues impacting special educational policy and practice. The value of empiricism as a philosophy and data-based teaching practices will be explored. The issues surrounding quantitative and qualitative measurement along with varied conceptualizations of validity, reliability, and accountable practice will be explored via assigned readings and individual projects. These projects will require students to assess the research-based merits of selected special educational practices. Candidates will be required to triangulate various quantitative and qualitative measures of educational and policy effectiveness in order to render empirically informed conclusions about differential effects of various practices in the field of special education. Prerequisite: Admission into the Professional Level II Education Specialist Credential program.

##### EDSP 514 ADVANCED COMMUNICATION, COLLABORATION, AND CONSULTATION IN SPECIAL EDUCATION (3)

EDUC 514 is a required course for the Professional Level II Education Specialist Credential program. EDUC 514 explores advanced issues surrounding communication, collaboration, and consultation in special education. The effective performance of educational leadership, advocacy, and team management, as well as methods for positively representing special education to parents, administrators, and other educators are addressed in the course. Additionally, skills and methods of collaborating and communicating with professionals and paraprofessionals about students' complex emotional and behavioral needs are addressed. The area of cross-agency transitional services and individualized transitional experiences are explored with emphasis on communication and collaboration across human service agencies. The development of collaborative planning, evaluation and refinement of instructional strategies, curriculum, adaptations and behavioral support are also required of candidates taking EDUC 514. Prerequisite: Admission into the Professional Level II Education Specialist Credential program.

### EDSP 515 ADV LEGAL ISSUES IN SPECIAL EDUC (3)

EDUC 515 is part of the Professional Level II Education Specialist Credential program. Advanced legal issues faced by teachers, administrators, and parents in special education are addressed. Topics include entitlement to services, procedural due process, complaint resolution, least-restrictive environment, provision of related services, parent participation, shared decision-making, and other related legal issues. Candidates review federal legislation, case law, and statutory requirements within the context of understanding the legal framework underlying special education and providing services, which are legally, as well as program-matically, sound. Prerequisite: Admission into the Professional Level II Education Specialist credential program.

### EDSP 516 PROF INDUCTION PLAN: CULMINATING ASSESSMENT (1)

EDUC 516 is the final course in Professional Level II Education Specialist Credential program. This course creates a context for the culminating assessment of the individualized Professional Induction Plan. Candidates will collaboratively assess the elements presented in their induction plans developed in EDUC 511. Working with University faculty, school district support staff, and other teachers, the candidates will evaluate the attainment of their professional goals by reviewing the evidence contained in their Professional Portfolio and applied to their school settings. Areas for continued professional growth will also be identified. Cr/NC only. Prerequisite: Admission into the Professional Level II Education Specialist Credential program.

### EDSP 578 PROJECT CONTINUATION (1-3)

### EDSP 595 SPECIAL STUDIES (1-4)

## Engineering Science (ES)

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### ES 110 INTRODUCTION TO ENGINEERING & LABORATORY EXPERIENCE (2)

Lecture, 1 hour, Laboratory, 3 hours. This course is designed to introduce principles of engineering to the students and expose them to the electronics and computer lab environment. The students are given opportunity to design and build some simple analog and digital circuits and make measurements using various types of lab equipment.

### ES 210 DIGITAL CIRCUITS AND LOGIC DESIGN (4)

Lecture, 3 hours, Laboratory, 3 hours. Logic gates, combinatorial logic and analysis and design of combinatorial circuits, electronic circuits for various logic gates. Flip-flops, registers, and counters, sequential circuits and state machines. Various logic families and comparison of their electrical characteristics such as fan-out, rise and fall times, delay, etc. Concepts of machine, assembly and high level languages and relationship between them, basic principles of computer design. Laboratory work will include designing, building, and testing of digital circuits, logic and sequential circuits. Prerequisites: MATH 142E, Co-req: ES 230; or consent of instructor.

### ES 220 ELECTRIC CIRCUITS (3)

Lecture, 3 hours. Review of Kirchhoff's laws, circuit design, node and mesh analysis, etc.; Thevenin's theorem, Norton's theorem, steady state and transient analysis, transfer function; AC power and three-phase circuits, Y-Delta equivalents. Multi-port networks, two-port networks with energy storage, and ideal transformers. Amplifiers and frequency response, filters. Prerequisites: ES 110 and MATH 211; Corequisite: ES 221 and PHYS 214, or consent of instructor.

### ES 221 ELECTRIC CIRCUITS LABORATORY (1)

Laboratory, 3 hours. Laboratory work on material treated in ES 220 emphasizing elementary design principles. Prerequisite: ES 110 and corequisite: ES 220.

### ES 230 ELECTRONICS I (3)

Lecture 3 hours, Laboratory 0 hours. Theory, characteristics, and operation of diodes, bipolar junction transistors and MOSFET transistors; analog and digital electronic circuits; design and analysis of analog electronic circuits such as filters, operational amplifiers, single and multistage amplifiers; modeling and simulation using spice/multisim software. Prerequisite: ES 220 and 221 and corequisite: ES 231 or consent of Instructor.

### ES 231 ELECTRONICS I LABORATORY (1)

Lecture, 0 hours, Laboratory, 3 hours. Laboratory work to accompany ES 230. Computer assisted design of electronic circuits involving devices such as diodes and transistors. Designing, building, and testing of electronic circuits such as filters, oscillator, amplifiers, etc. Corequisite: ES 230.

### ES 310 MICROPROCESSORS AND SYSTEM DESIGN (4)

Lecture, 3 hours, Laboratory, 3 hours. Hardware architecture of a microprocessor and its programming and instruction design, memory hierarchy and I/O interfaces, comparison of various microprocessor architectures and capabilities, system design using microprocessors. Laboratory work. Prerequisites: ES 210 and ES 230; or consent of instructor.

### ES 314 ADVANCED PROGRAMMING, MODELING AND SIMULATION (4)

Lecture, 4 hours, Laboratory, 0 hours. Pointers and dynamic allocation of storage; linked lists; an introduction to the object oriented programming (OOP) paradigm; classes and objects; encapsulation; member variables and member functions. Static arrays, dynamic arrays, stacks and queues, linked lists, trees, binary search trees, balanced trees (AVL, red-black, B-trees), heaps, hashing and graphs. System modeling techniques and applications such as generation of noise (random numbers) and correlated signal with different pdfs, measurement of statistical parameters like moments, queuing systems, and system simulation. Prerequisite: CS 115: Programming I. Co-requisites: MATH 345: Probability Theory and ES 220: Electric Circuits, or consent of instructor.