CAREER AND TECHNICAL EDUCATION (CTE)

CTE 120 Intro to Comp Aided Drafting
1 credit
This course has been designed to give students an introductory experience in sketching, drafting theory, and Computer Aided Drafting (CAD).

CTE 121 Introduction to Principles of Engineering and Technology
1 credit
Students will be introduced to the principles of engineering and technology.

CTE 122 Introduction to Manufacturing and Construction
1 credit
This course introduces students to safety, materials, and processes used in the manufacturing and construction industries.

CTE 123 Introduction to Power, Energy and Transportation
1 credit
Students will be introduced to the topics of power, energy, and transportation and their impact on technical societies.

CTE 130 Introduction to Electricity and Electronics
3 credits
This introduction to electricity and electronics includes properties of resistors, capacitors, and inductors in electrical circuits; basics of power distribution systems and house wiring; and the use of meters and oscilloscopes in lab. Three 1-hr lec and one 2-hr lab a wk.

CTE 152 Manufacturing: Non-Metallic Materials and Processes
3 credits
This course introduces and reinforces knowledge in the area of manufacturing and manufacturing processes of non-metallic materials such as wood and composites. The materials themselves, primary processing, and the systems of secondary processing will be studied. Recommended Preparation: CTE 120, CTE 267 or ENGR 105.

CTE 200 (s) Seminar
Credit arranged.

CTE 203 (s) Workshop
Credit arranged.

CTE 204 (s) Special Topics
Credit arranged.

CTE 267 Computer Aided Drafting/Design
3 credits
This course has been designed to give students an introductory experience in manual drafting and sketching, drafting theory and 2D and 3D computer aided drafting Students may have to spend time in the CAD lab outside of class time to complete the required work.

CTE 298 (s) Internship
Credit arranged.

CTE 299 (s) Directed Study
Credit arranged.

CTE 307 Inservice for New Professional-Technical Teachers
3 credits
Resolution of common problems faced by new teachers through seminars and observations/evaluations/perceptions by UI preceptor; course meets state certification requirements for 30 hrs of inservice for vocational specialist certification.
Prereq: Permission.

CTE 310 Lab Safety, Mgmt, & Liability
3 credits
Overview of operations, use, and maintenance of laboratory tools and equipment, laboratory management and liability concerns.

CTE 351 Principles and Philosophy of Career and Technical Education
3 credits
Joint-listed with CTE 551
Overview and interpretation of history, aims, and purposes of public education and professional-technical education; issues and programs comprising professional-technical education in Idaho and in the nation. Additional projects/assignments required for graduate credit.

CTE 352 Manufacturing: Metallic Materials and Processes
3 credits
This course introduces and reinforces knowledge in the area of manufacturing and manufacturing processes of metallic materials (ferrous and nonferrous). The materials themselves, primary processing, and the systems of secondary processing will be studied in-depth. Recommended Preparation: Work Experience.

CTE 353 Manufacturing Systems
3 credits
In-depth examination and implementation of manufacturing theory and processes including research and development, product planning and controlling. Topics, such as Lean Manufacturing, Kanban, relating to manufacturing facilities and management of manufacturing processes will be discussed, studied and implemented in the manufacture of a designed product in quantity.
Prereq: CTE 267 and CTE 310.

CTE 354 Construction Technology
3 credits
Teaching techniques and methods of instruction for a systems approach to construction technology including residential, commercial, and civil. Recommended Preparation: CTE 310.

CTE 363 Fire Protection Safety
3 credits
Basic industrial fire protection techniques; basic fire chemistry; basic fire suppression/sprinkler design.

CTE 370 Transportation & Engineering Technologies
4 credits
Students will explore various forms of renewable energy and transportation systems. They will also work in teams to propose solutions to power, energy and transportation issues. Students will research, design, build and evaluate their potential solutions in a hands-on laboratory environment. Recommended Preparation: MATH 143 and PHYS 111.

CTE 398 (s) Internship
Credit arranged.

CTE 400 (s) Seminar
Credit arranged.

CTE 403 (s) Workshop
Credit arranged
Graded P/F.
Prereq: Permission.
CTE 404 (s) Special Topics  
Credit arranged.

CTE 405 (s) Professional Development  
Credit arranged  
Joint-listed with CTE 505  
Credits earned in this course will not be accepted toward grad degree programs. Professional development and enrichment. Additional projects/assignments required for graduate credit.

CTE 410 Technology & Society  
3 credits  
In-depth examination and implementation of the relationship between technology and social change; previous course work in technology is not essential.

CTE 411 Web Graphics and Animation  
3 credits  
This course involves study of the role of multi-media and animated graphic elements in supporting effective websites. Specific focus on the design and creation of animated graphics using industry standard applications is emphasized throughout the process of website development. Content is taught in the context of Professional-Technical Education.

CTE 412 Web Design using Dreamweaver  
3 credits  
Use HTML editors to create web pages. There are process-oriented tutorials that teach core principles, techniques and tips in a hands-on training format. You will be expected to work on hands-on exercises and projects, problem solving, research, and thinking skills to produce a Web site.

CTE 413 Retail Merchandising for Marketing Education  
3 credits  
Designed for marketing teacher preparation. Contemporary information and activities that address retail merchandising, including standards and curriculum resources for secondary and two-year technical college courses. Curriculum standards, educational resources, careers, the role of retail, and the operation of a retail business that includes market analysis, store layout, and merchandising. Recommended Preparation: MKTG 321.

CTE 415 Microcomputer Applications  
3 credits  
Advanced computer applications course designed primarily for business teacher education students; includes extensive hands-on experience using word processing, spreadsheet, and database programs used in both industry and business education programs; addresses methodology, curriculum development, and classroom management techniques.

CTE 416 Website Design and Development  
3 credits  
Basics of HTML, advanced use of web development applications for purposes of creating effective websites that incorporate accepted design principles, taught in the context of Professional-Technical Education.

CTE 417 Teaching & Learning through STEM Integration  
3 credits  
Students examine a variety of approaches to teaching and assessment methods for technology educators at the secondary level. Instructional strategies best suited to learning technical skills, related academics, problem solving, and hands-on activities will be explored through the lens of Science, Technology, Engineering, and Mathematics (STEM) integration.  
Prereq: EDCI 201 , EDCI 301, and CTE 310 .

CTE 418 Teaching Economics and Personal Finance  
3 credits  
In-depth examination and implementation of methods and materials for teaching economics and personal finance.  
Prereq: ECON 201 or Equivalent.

CTE 419 Database Applications and Information Management  
3 credits  
Teaching and training strategies for database applications. Includes database management principles and methods of information retrieval, processing, storage and distribution. Advanced project reqd for graduate credit.

CTE 420 Assessment in Contextual Learning Environments  
3 credits  
Methods of assessing in contextual and hands on learning environments. Includes authentic assessment of project based learning.

CTE 426 Occupational Analysis and Curriculum Development  
3 credits  
Instructional design systems and curriculum development as a systematic method of designing, carrying out, and evaluating the total process of teaching and learning; based on research in human learning and communication, employing a combination of human and non-human resources to bring about effective instruction. Focus on secondary and post-secondary professional/technical education.

CTE 430 Leadership and Student Organizations  
2 credits  
Development of leadership skills; instruction in planning, implementation and supervision of professional-technical student organizations; and participation in regional leadership conferences.

CTE 431 Supervising CTE Career and Technical Student Organizations  
1-3 credits, max 3  
Supervising CTE CTSOs involves active participation in career and technical student organization (CTSOs). Students assist in the administration and supervision of secondary regional and/or state CTSO conferences, and involve themselves with content area post-secondary CTSO competitive events program. Students are responsible for arranging and financing travel to appropriate CTSO events.

CTE 439 Robotics Technologies for K-12 Environments  
3 credits  
Cross-listed with CTE 539  
In-depth examination of a variety of programming languages and methods, hardware and software for robotics technologies. Teaching and learning of robotics theory, programming and applications through Career-Technical student organizations will be emphasized. Students will participate in leadership roles in K-12 robotics events. Additional projects required for graduate credit.

CTE 445 Professional Role Development in PTTE I  
2 credits  
To acquaint the student to the unique dimensions of Professional–Technical teaching. The course is designed to cause the participant to reflect on, and examine through demonstration, an understanding of the principles and standards of Idaho’s beginning teacher requirements. An 8 hour Saturday meeting for CPR and first aid training will be required.

CTE 447 Diverse Populations and Individual Differences  
2-3 credits  
Examines the impact of individual differences on teaching and learning.
CTE 455 Professional Role Development in PTTE II
1 credit
Concurrent with the Internship will focus on developing a reflective stance to critically examine one’s teaching for improvement and enhancement by linking prior knowledge and making informed decisions about needed change and learning.
Coreq: CTE 484.

CTE 460 Desktop Publishing
3 credits
Advanced desktop publication techniques, concepts, and applications through use of computer technology; planning, layout, and design of publications are highlighted. Recommended Preparation: CTE 415.

CTE 462 Communication Technology
3 credits
Investigation and laboratory activities associated with a variety of communication technologies, including interpersonal, human to machine and machine to machine, through contemporary devices and materials. Recommended Preparation: CTE 415.

CTE 464 Career Guidance and Transitioning to Work
3 credits
Designed for career development counselors and facilitators; establishment of the three pillars of career guidance and how to implement the steps for developing a comprehensive individualized career plan.

CTE 470 Technical Competence
1-32 credits, max 32
Technical competence is gained from occupational credentials or passing of competency exams related to the bachelor of science degree in PTE education or technology. Grades for successful completion of CTE 470 will be transcripted as P (pass) normally during the student’s last semester and completion of all degree requirements.

CTE 472 Teaching and Learning in Organizations
3 credits
Students examine research-based approaches to facilitate learning outcomes for occupational educators in post-secondary, secondary and private sector contexts; Instructional strategies and materials will be considered and developed to facilitate learning in technical skills, related applied academics, and workplace readiness knowledge and dispositions.

CTE 481 Computer-Integrated and Robotics Manufacturing Technologies
3 credits
In-depth examination and implementation of advanced computer aided drafting, 3D solids modeling, computer numerical control, basic and advanced toolpath generation, virtual machining environments, and robotics applications. Enrollment per section limited to lab stations available.
Prereq: CTE 267 or ENGR 105; and CTE 310, CTE 352, and ASM 202.

CTE 484 (s) Internship in Career and Technical Education Teaching
3-14 credits, max 28
Guided observation, supervised instruction, and comprehensive team and independent teaching in school settings.
Prereq: Admission to teacher education program
Coreq: EDCI 401.

CTE 492 Business and Marketing Education Methods
3 credits
Teaching pedagogy, instructional materials and student evaluation strategies in Business and Marketing Education.
Prereq: Permission.

CTE 494 Senior Project
3 credits
In the last year of study, students select an individual design project related to their area of specialization within technology education. Some students may have the option of joining a Senior Design Team in the College of Engineering. Project must be approved by instructor.

CTE 495 Administrative Technology Management and Procedures
3 credits

CTE 496 Directed Work Experience
1-3 credits, max 9
Job analysis and descriptions; weekly work-experience reports and analysis coordinated with problems related to the student’s employment in an approved work station.

CTE 498 (s) Internship
Credit arranged.

CTE 499 (s) Directed Study
Credit arranged.

CTE 500 Master’s Res & Thesis
Credit arranged.

CTE 501 (s) Seminar
Credit arranged.

CTE 502 (s) Directed Study
Credit arranged.

CTE 503 (s) Workshop
Credit arranged.

CTE 504 (s) Special Topics
Credit arranged.

CTE 505 (s) Professional Development
Credit arranged
Joint-listed with CTE 405
Credits earned in this course will not be accepted toward grad degree related to their area of specialization within technology education. Some students may have the option of joining a Senior Design Team in the College of Engineering. Project must be approved by instructor.

CTE 510 (s) Professional Problems
1-3 credits, max 9.

CTE 511 (s) Technical Problems
1-3 credits, max 6.

CTE 518 Advanced Input Technologies for the 21st Century
3 credits
Advanced teaching methods and materials of inputting and computer technology, identified best practices will be emphasized as well as a review of research literature. This course will include a field experience as well as a unit on trouble shooting computer hardware.

CTE 519 Database Applications and Information Management
3 credits
Joint-listed with CTE 419
Teaching and training strategies for database applications. Includes database management principles and methods of information retrieval, processing, storage and distribution. Advanced project reqd for graduate credit.
CTE 522 Issues in Business and Marketing Education
3 credits
Philosophies, objectives, trends, and organization patterns of business and marketing education in secondary schools and colleges.

CTE 531 National Board Certification I
3 credits
Support and development of exemplary teaching candidates seeking to complete the career and technical education portfolio required by the National Board for Professional Teaching Standards. Recommended Preparation: Meet NBPTS process minimum qualifications. (Fall only)

CTE 532 National Board Certification II
3 credits
Support and development of exemplary teaching candidates seeking to complete the career and technical education portfolio required by the National Board for Professional Teaching Standards. Recommended Preparation: Meet NBPTS process minimum qualifications. (Spring only)

CTE 537 Integration of Academic and Professional-Technical Education
3 credits
Examination of philosophical/theoretical underpinnings of integration; review of models, development of curricular and instructional materials.

CTE 539 Robotics Technologies for K-12 Environments
3 credits
Cross-listed with CTE 439. In-depth examination of a variety of programming languages and methods, hardware and software for robotics technologies. Teaching and learning of robotics theory, programming and applications through Career-Technical student organizations will be emphasized. Students will participate in leadership roles in K-12 robotics events. Additional projects required for graduate credit.

CTE 544 Idaho Leadership Institute
1-12 credits, max 12
Institute for the preparation of the next generation of Idaho’s leaders in professional-technical education. 
Prereq: Accepted into the Idaho Leadership Institute.

CTE 551 Principles and Philosophy of Career and Technical Education
3 credits
Joint-listed with CTE 351 Overview and interpretation of history, aims, and purposes of public education and professional-technical education; issues and programs comprising professional-technical education in Idaho and in the nation. Additional projects/assignments required for graduate credit.

CTE 578 International and Cross-Cultural Workforce Development
3 credits
Examination of international workforce development efforts at the secondary and postsecondary levels with emphasis on the relationships among economic, community, and workforce development. Adult education, training, and technical education considerations are integrated.

CTE 597 (s) Practicum
Credit arranged
Application of theories and techniques; supervised field experiences in selected settings. Graded P/F.
Prereq: Permission.

CTE 598 (s) Internship
Credit arranged
Supervised experience in teacher education, administration, supervision, or ancillary services in professional-technical education. Graded P/F.
Prereq: Permission.

CTE 599 (s) Non-thesis Master’s Research
Credit arranged
Research not directly related to a thesis or dissertation. 
Prereq: Permission.

CTE 600 Doctoral Research & Dissertation
Credit arranged.