

Industrial Technology Assessment Plan Rev. 4/26/2018

Industrial Technology	14-15	15-16	16-17	17-18	18-19	19-20
INDTB5 - Architectural Woodworking and Design						
<ul style="list-style-type: none"> Upon completion the student will be able to: SLO 1: Safety Students will understand the value and necessity of practicing occupational safety in the architectural woodworking industry. They will demonstrate content proficiency by: <ul style="list-style-type: none"> • Passing required safety tests; • Demonstrating the safe use of hand tools and power tools; • Explaining the roles and responsibilities of the various governmental safety agencies; • Using safe work practices; 					X	
<ul style="list-style-type: none"> SLO 10: Finishing Processes Students will understand the finishing processes (spraying, rolling, brushing, etc.) and related health and environmental issues. They will select and safely perform finishing processes in an environmentally responsible manner 					X	
<ul style="list-style-type: none"> SLO 11: Career Preparation and Planning Students will understand career preparation and how it applies across all standards for students planning to successfully enter and advance in the architecture and construction industries. They will demonstrate content proficiency by developing: <ul style="list-style-type: none"> • Personal skills - exhibit positive attitudes, self confidence, honesty, perseverance, self discipline (dependable, reliable, punctual, etc) and personal hygiene; manage time and balance priorities to demonstrate capacity for life long learning. • Interpersonal skills - works cooperatively with others, share responsibilities, accept supervision and assume leadership roles; demonstrate cooperative working relationships across gender and cultural groups. • Thinking and Problem Solving skills - recognize problem situations; identify, locate, and organize needed information or data; propose, evaluate, and select from alternative solutions. • Communication skills - communicate both orally and in writing; listen attentively and follow instructions, requesting clarification or additional information as needed. • Employment literacy skills - promote the role of the construction industry in a productive society and the purpose of professional organizations; develop a plan for professional growth across all aspects of the industry, including financial, leadership, and advancement elements. • A Career plan - explore options for future learning and employment, including apprenticeship, community college, university, internship, and other training programs. 					X	
<ul style="list-style-type: none"> Solve a design problem. 					X	
<ul style="list-style-type: none"> Make accurate conceptual drawings to guide the construction of a design. 					X	
<ul style="list-style-type: none"> Operate a range of shop equipment employing appropriate safety procedures. 					X	
<ul style="list-style-type: none"> Construct a design that exhibits a high level of craft. 					X	
<ul style="list-style-type: none"> Students will practice occupational safety 					X	
<ul style="list-style-type: none"> SLO 2: Research and Design Students will understand research and design strategies that are environmentally safe and appropriate to architectural woodworking and construction product development. Students will incorporate these strategies (i.e. ideation, review of literature, rough sketches, study model, final sketches, prototype development, and prototype evaluation) in universal problem-solving approach (i.e. input, process, outcome, feedback) for the development of architectural woodworking products 					X	
<ul style="list-style-type: none"> SLO 3: Measurement / Math Application Students will understand and apply measurement systems in the planning and layout processes used in Architectural Woodworking. They will demonstrate content proficiency by: <ul style="list-style-type: none"> • Designing solutions to given architectural woodworking problems; • Accurately measuring given construction materials for processing; • Using measurements to calculate material requirements; • Converting scale drawing measurements to full dimensions; • Converting measurements from one form to another 					X	
<ul style="list-style-type: none"> SLO 4: Hand Tools Students will understand safe and appropriate use of hand tools common to their architectural woodworking project (hammers, pliers, saws, wrenches, etc.). They will demonstrate content proficiency by: <ul style="list-style-type: none"> • Identifying tools commonly used in architectural woodworking; • Correctly using tools in their intended application; • Demonstrating basic care and maintenance of hand tools 					X	
<ul style="list-style-type: none"> SLO 5: Stationary and Portable Power Tools Students will understand safe and appropriate use of applicable stationary and portable electric power tools common to architectural woodworking. They will demonstrate content proficiency by: <ul style="list-style-type: none"> • Identifying and correctly using drill motors and presses, stationary and portable circular saws, stationary bandsaws and reciprocating saws, stationary and portable sander machines, routers jointers, et.al. • Demonstrating basic care and maintenance of applicable stationary and portable electric power tools 					X	
<ul style="list-style-type: none"> SLO 6: Tolerancing Relationships Students will understand tolerance relationships between functional mating parts and will calculate and apply correct tolerancing conventions to their project and applicable drawings. 					X	
<ul style="list-style-type: none"> SLO 7: Planning and Layout Processes Students will understand the planning and layout processes (designing, print reading, measuring, etc.) used in architectural woodworking. They will interpret prints and apply the information in basic planning and layout process 					X	
<ul style="list-style-type: none"> SLO 8: Materials Processing Students will understand the ways in which tools and machines are used to process materials (cutting, drilling, shaping, etc.). They will select and safely using appropriate tools, machines, and materials. 					X	
<ul style="list-style-type: none"> SLO 9: Assembling Processes Students will understand the assembling processes (gluing, clamping, fastening, etc.). They will select and safely using appropriate tools and materials by following standard assembly procedures. 					X	

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INDTB10 - Occupational Readiness

• Upon completion the student will be able to: Student Learning Outcome 1 - Academic and Career Planning Using the Bakersfield College catalog, students will identify themselves with the resources available to them through student services, academic planning, and learning assistance. Students will also research the programs, certificates, and degrees available, prepare a Student Educational Plan for the educational goal of their choice, and complete an <u>Individual Education and Career Plan</u> .				X		
• Upon completion the student will be able to: Student Learning Outcome 2 - Industrial Safety Using the appropriate written resources, students will correctly identify the various federal and state safety standards and practices impacting their chosen profession, and communicate the personal protective equipment used in their profession, and list the essential fire safety and workplace safety precautions for workers in the Industrial Technology career cluster.				X		
• Upon completion the student will be able to: Student Learning Outcome 3 – Technical Math Review and Measurement Skills Through in-class practice and written worksheets, students will complete exercises that include measuring and the use of precision measuring devices, decimals, fractions, percents, <u>common formulas, ratios and proportion, basic geometry, and other related mathematical computations.</u>					X	
• Upon completion the student will be able to: Student Learning Outcome 4 – Employment-Seeking Skills and Resources Through written worksheets, organizers, and templates, students will assemble the materials for successful completion of job applications. Students will assemble the materials needed to successfully create an "Employment-Seeking Portfolio," including the creation of a resume and cover letter. Students will be introduced to successful employment interview skills vis-a-vis their participation in related small and large group classroom activities, and demonstrate those skills through actual in-class interview practice. Students may also demonstrate their understanding of these skill sets by participating in a mock interview provided through the job <u>placement center located on campus.</u>						X

INDTB48WE - Occupational Work Experience Education

• Upon completion the student will be able to: Articulate the specific work experience objectives in Industrial Technology as described by employer and identify the various skills, knowledge and attitudes necessary to the <u>accomplishment of those objectives.</u>				X		
• Upon completion the student will be able to: Demonstrate the acquisition of the various skills, knowledge and attitudes necessary to the completion of the work experience objectives in Industrial Technology and the ability <u>to effectively meet employer's job expectations.</u>					X	
• Upon completion the student will be able to: Identify and analyze the application of acquired skills, knowledge and attitudes to <u>career opportunities in Industrial Technology.</u>						X

INDTB271 - Special Problems in Welding

• Upon completion the student will be able to: SLO #1: Safety Student will illustrate the concepts of safety, correct tool usage, and apply these skills in the lab environment.					X	
• Upon completion the student will be able to: SLO #2: SMAW Students will summarize the setup and operation of Shielded Metal Arc Welding equipment, and <u>apply knowledge in lab</u>				X		
• Upon completion the student will be able to: SLO #3: GMAW Students will summarize the setup and operation of Gas Metal Arc Welding equipment.				X		
• Upon completion the student will be able to: SLO #4: FCAW Students will summarize the setup and operation of Flux Cored Arc Welding equipment.				X		
• Upon completion the student will be able to: SLO #5: GTAW Students will demonstrate the setup and operation of Gas Tungsten Arc Welding equipment on <u>mild steel, and aluminum.</u>					X	
• Upon completion the student will be able to: SLO #6: Oxy-Acetylene Cutting Students will illustrate the setup and operation of Oxy-Acetylene cutting <u>equipment and demonstrate safe use to peers.</u>					X	
• Upon completion the student will be able to: SLO #7: Plasma Arc Cutting Students will summarize the setup and operation of Plasma Arc cutting equipment <u>and demonstrate safe use to peers</u>						X
• Upon completion the student will be able to: SLO #8: Welding Certification Students will explain when a welder is certified to a welding procedure and be able <u>to explain welder qualification to others.</u>						X
• Upon completion the student will be able to: SLO #9: Welding Codes Students will demonstrate the relationship of codes to welds being made, and be able to <u>transfer that knowledge to other students.</u>						X

INDTB272 - Special Problems/Electronics

• Upon completion the student will be able to: The student, given proper instruction, will research and review various technical topics and describe the necessary tools, equipment and skill requirements. The student's knowledge and skill level will be demonstrated by achieving a minimum 70% score on all lab <u>exercises and examinations as detailed in the "Petition for Individual Study" form.</u>						X
• Upon completion the student will be able to: The student will review, develop and employ safe work habits pertaining to the student's particular area of <u>investigation.</u>						X
• Upon completion the student will be able to: The student will develop and demonstrate technical skill and knowledge of various electronics techniques and <u>principles.</u>						X

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INDTB274 - Special Problems in Wood Working						
<ul style="list-style-type: none"> Upon completion the student will be able to: Student Learning Outcome: The student, given proper instruction, will research and review various technical topics and describe the necessary tools, equipment and skill requirements. The student's knowledge and skill level will be demonstrated by achieving a minimum 70% score on all lab exercises and examinations as detailed in the "Petition for Individual Study" form. Objectives: A. In consultation with the instructor, the student will develop meaningful and clearly stated project objectives for the topic investigated. B. The student will explain orally and in writing the description of the specific problem to be investigated and be able to explain how this problem will assist them in enhancing their specific career goal. C. The student will demonstrate progress concerning the specific problem through written or oral reports submitted to the instructor. 						X
<ul style="list-style-type: none"> Upon completion the student will be able to: Student Learning Outcome: The student will review, develop and employ safe work habits pertaining to the student's particular area of investigation. Objectives: A. The student will demonstrate effective work habits by utilizing proper safety equipment and practices during study. B. The student will be able to discuss and demonstrate safety requirements relative to the proper operation of various woodworking tools and equipment. 						X
<ul style="list-style-type: none"> Upon completion the student will be able to: Student Learning Outcome: The student will develop and demonstrate technical skill and knowledge of various woodworking and/or cabinetmaking techniques and principles. 						X
<ul style="list-style-type: none"> Upon completion the student will be able to: Communication in the English Language and Critical Thinking (6 units) Courses in language and rationality are those which develop for the student the principles and applications of language toward logical thought, clear and precise expression, and critical evaluation of communication. Take 3 units in oral communication and 3 units in written communication. A.1 Oral Communication 1. Form and present informative persuasive messages. 2. Demonstrate competence in both active and empathic listening. 3. Present oral messages to appropriate audiences and adhere to conventions of message delivery. 4. Manage personal communication apprehension and anxiety. A.2 Written Communication 1. Identify the controlling idea and the main points of college-level expository and argumentative essays. 2. Evaluate expository and argumentative essays through the application of critical thinking techniques. 3. Write logical and coherent expository and argumentative essays, summaries and paraphrases using correctly the standard conventions of written English. A.3 Critical Thinking (Critical thinking is the rational and reflective process of making and supporting judgments.) 1. Make judgments that skillfully interpret information and phenomena. 2. Skillfully support judgments. 3. Identify and skillfully explore assumptions, implications, and alternatives to judgments. 4. Identify and differentiate statements of opinion, matters of fact, and arguments. 5. Analyze arguments into supporting judgments and supported judgments. 6. Skillfully evaluate judgments. 7. Skillfully evaluate the support for judgments. 						X
<ul style="list-style-type: none"> Upon completion the student will be able to: Physical Universe and Life Forms (6 units) Courses in the natural sciences are those that examine the physical universe, its life forms, and its natural phenomena. Further, courses in the natural sciences help the student develop an appreciation and understanding of the scientific method. Courses in the natural sciences, math and logic help students apply logical, qualitative and quantitative reasoning in solving problems or analyzing arguments. Take 3 units in Natural Sciences and 3 units in Math and Logic. B.1 Natural Sciences 1. Demonstrate a knowledge of natural phenomena and recognize the processes that explain them. 2. Demonstrate a knowledge of scientific methodologies when solving a problem. B.2. Mathematics and Logic (Analytical Thinking) 1. Apply formal systems of reasoning in solving problems or analyzing arguments. 						X
<ul style="list-style-type: none"> Upon completion the student will be able to: Arts, Literature, Philosophy and Foreign Language (3 units) Courses in the Arts, Literature, Philosophy and Foreign Language are those which study the cultural activities and artistic expressions of human beings. The courses will help the student develop an awareness of the ways in which people throughout the ages and in different cultures have responded to themselves and the world around them. 1. Demonstrate an understanding and appreciation of the ways in which arts, literature, philosophy or foreign languages reflect historical, intellectual, and cultural contexts, as well as aesthetic tastes. 						X
<ul style="list-style-type: none"> Upon completion the student will be able to: Social, Political, Legal, and Economic Institution and Behavior: Historical Background: (9 units for AA; 6 units for AS) Courses in the social and behavioral sciences are those which focus on people as individuals and as members of society. The courses will help the student develop an understanding of the methods of inquiry used by the social and behavioral sciences. For an AA Degree, take three units from American History and Politics, and three units from Other Social Science Courses, and 3 units from Behavioral Science. For the AS Degree, take three units from American History and Politics, or from Other Social Science Courses, and three units from Behavioral Science. 1. Demonstrate an understanding of the perspectives, theories, methods and core concepts of the social and behavioral sciences. 2. Explain the major problems and issues in the disciplines in their contemporary, historical and geographical contexts. 3. Demonstrate an understanding and appreciation of the contributions and perspectives of women, ethnic and other minorities, and Western and non-Western peoples. 						X
<ul style="list-style-type: none"> Upon completion the student will be able to: Lifelong Understanding and Self-Development (3 units) Courses in this area will prepare students for lifelong integrated physiological and psychological development. 1. Critically examine the development of the individual as an integrated physiological, psychological, spiritual, and social being. 2. Identify, describe and explain the interactions of the internal and external influences and effects in human development and behavior over the course of the human life span. 						X

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INDTB275 - Special Problems in Automotive Technology						
<ul style="list-style-type: none"> Upon completion the student will be able to: Instruct, demonstrate, direct, and supervise other students in automotive technology courses. 				X		
<ul style="list-style-type: none"> Upon completion the student will be able to: Plan, assemble the needed materials and resources, implement, and assess/evaluate the performance and/or quality of a significant project or complex procedure or operation. 		X				
<ul style="list-style-type: none"> Upon completion the student will be able to: Evaluate his/her performance regarding project management, project/task implementation, instructing and demonstrating automotive technical knowledge and skills, and employability skills using feedback provided by peer assessments and performance reviews. 						X