

School of Trades and Industrial Technologies School Plan 2011-12

<p>1. Mission</p>	<p>The School Trades and Industrial Technologies is committed to providing quality educational programs that produce an educated and skilled workforce. This includes enhancing the quality of life for students through Career Technical Education and General Education courses that lead to certification, licensing, degrees, transfer pathways to four year colleges and universities and life-long learning opportunities. The departments in the School of Trades and Industrial Technologies embrace and serve a diverse student population and empower individual learners through personal and professional growth opportunities.</p>
<p>2. Alignment to college-wide goal</p>	<p>The School of Trades and Industrial Technologies supports the college commitment to student success through rigorous course work, performance assessment, technical education and experiential learning. This includes student excellence in the areas of creative thinking, critical thinking and problem solving, goal attainment, computer literacy, teamwork and collaboration.</p> <p>Through the development of course and program level Student Learning Outcomes and Assessment, the departments in the School of Trades and Industrial Technologies support the Board of Trustees' goal to measure and improve student success and the college commitment to Learning.</p> <p>In support of the College goals to improve equity, access, retention, persistence, certificate completion and transfer readiness, the departments in the School of Trades and Industrial Technologies are committed to focusing and expanding their course offerings to align with industry and workforce needs, including offering classes with non-traditional scheduling and online instruction. This commitment is further supported with efforts to ensure that courses are adequately staffed by knowledgeable instructors, labs are covered by qualified personnel and adequate support staff are available to complete all duties necessary to ensure that students receive a quality educational experience.</p> <p>As part of the college wide CTE Assessment process currently underway, three departments within the school are participating in the initial beta test - Drafting/Architecture, Air Conditioning/Refrigeration (HVAC) and the Automotive programs.</p>
<p>3. How does School support Dept/ Program goals?</p>	<p>The department heads in the School of Trades and Industrial Technologies meet throughout each semester to discuss curriculum, instruction, enrollment management, program planning, staffing needs, resource requests and trends both internally and externally that shape present and future planning for instruction and student success. The School office supports operational and student success by processing all school business and communications in a timely matter, providing ongoing coordination for school business, meetings and events and assuring that all departments within the School are provided with current and accurate information that supports operational and student success throughout the School.</p>
<p>4. Summary of Access, Efficiency and Effectiveness</p>	<p>The School of Trades and Industrial Technologies achieved a school wide success rate of 69%, a school wide retention rate of 86% and a school wide completion rate of 73% for the spring 2011 semester. The School is committed to increasing each of these student success indicators in future semesters. Programs and classes throughout the School continue to achieve high enrollments and generate wait lists. In response to the fiscal challenges the college is facing resulting from the state budget, the School has made the necessary changes to offer the maximum number of courses</p>

	it can provide to students without exceeding the budget that is allocated to the School.
5. Summary of Enrollment Management Efforts, Issues, Strategies	The School of Trades and Industrial Technologies department heads and the dean meet throughout each semester to plan and discuss multiple items, including schedule development, program planning and review, and enrollment management. Planning for each semester involves developing strategies, particularly in difficult budget times, to best allocate school-wide resources to those areas with higher demand or impacted enrollments. Individual departments have also made changes to course content, course offerings, and curriculum guides to better serve student learning and support student success.
6. Evidence of Academic Quality	The School of Trades and Industrial Technologies has completed all Program Reviews and is committed to completing all course and program level SLO's. Assessment plans are in progress and several course assessment plans are ready for implementation.
7. Identify programs/ activities requiring attention	The ongoing state fiscal situation continues to have a negative impact on the programs in our School and the college as a whole. Specifically, with the workload reductions that have taken place and thus the decline in classes offered, our programs are having difficulty offering the courses needed to enable students to complete certificates and degrees in a timely manner. There are a number of facilities related items requiring attention. Specific information related to these facilities related needs have been articulated in the individual department plans. In addition, the School has compiled a list of facilities related improvements that have been submitted along with requests from other areas in Academic Affairs, to the Facilities department.
8. Curriculum & Instruction: Emerging needs	Based on input from advisory committees, industry, Economic and Resource Development, accreditation standards, state and federal funding requirements, federal licensing mandates and developing overseas markets, the faculty in the School of Trades and Industrial Technologies have identified multiple areas for curricular expansion and development. New technology and market demands call for the revamping of existing courses and the implementation of new courses. This is especially true of Green technology. Green is being introduced in virtually all areas of the School including Architecture, Alternative Fuels, Diesel, Automotive Technology, HVAC, Fabrication and Design, Electricity and Electrical Technology and Construction. Additional new areas to pursue include cross-disciplinary curriculum with Green courses in other Schools. Each of the programs in the school has a focus on workforce development as they prepare students to enter the workforce and/or transfer to four year universities to continue their program of study.
9. Issues and Concerns regarding Curriculum and Instruction	The biggest concerns are the need for timely replacement of retiring full time faculty, the loss of class sections due to funding cuts, loss of many weekend and evening courses offerings and the inability of students to complete certificate and/or transfer curriculum requirements in a timely way due to those reductions.
10. Full-time faculty staffing priorities	The School of Trades and Industrial Technologies submitted a request for a Welding instructor as part of the Fall 2010 Hiring Priorities process. That request was approved and the instructor began teaching in the Spring 2012 semester. As part of the Fall 2011 Hiring Priorities process, the school submitted two requests - one Mechanical Drafting instructor and one Architectural Drafting instructor. Due to the budget uncertainty caused by

	<p>the state, it is not known at this time how many full time faculty positions will be approved for hire next year, or which academic disciplines the hires will be from. Additional instructor requests will be submitted as part of the Hiring Priorities process, based on any retirements and the top priority program needs the School has at that time.</p>
11. Part-time faculty staffing (FTEF) trends	<p>The overall number of part-time faculty continues to decrease due to budget constraints imposed by the state's fiscal crisis. The School of Trades and Industrial Technologies depends on knowledgeable part time faculty for instructional support and specialty instruction. The School remains committed to recruiting and retaining highly competent part time faculty while working to increase diversity. The School recognizes the need to invest in the professional development of part time faculty who bring expertise from industry.</p>
12. Classified hiring needs/priorities	<p>The School of Trades and Industrial Technologies is highly dependent on the committed, quality support provided by the Classified staff. The nature of instruction in Trades is highly dependent on recruiting and maintaining a highly qualified and dedicated Classified staff to support students and staff.</p>
13. Professional Development/ Training Activities needed	<p>All programs in the School of Trades and Industrial Technologies recognize the need for faculty to stay up-to-date in the research, technology and theory in their disciplines. As Technology evolves at a record pace, the need to stay current with advancing trends becomes an increasing challenge. Increased funding for Faculty/Staff professional development will allow faculty in all programs to attend conferences and workshops specific to their disciplines. Ongoing Professional Development ensures that our staff is able to provide the most current pedagogy in their instruction to prepare students to have the best opportunity to be successful. The School recognizes the need to invest in the professional development of part time faculty who bring expertise from industry.</p>
14. Budget account adjustments needed	<p>See attached document</p>
15. Infrastructure/facilities issues	<p>A number of infrastructure and facilities related items are in need of attention. The items include electrical, data infrastructure, lighting, and storage for instructional materials, supplies and chemicals associated with our programs. Specific information related to these needs have been articulated in the individual department plans. In addition, the School has compiled a list of facilities related improvements that have been submitted along with requests from other areas in Academic Affairs, to the Facilities department.</p>
16. Access (ADA-compliance) issues?	<p>Though the School has received resources and support to open two new buildings for our programs in recent years, the majority of the facilities are older and thus there are accessibility items that deserve attention, such as wider doorways, accessible restrooms, stairways and steps, lab access, students learning stations, etc. Many of these needs have been identified in the department plans.</p>
17. Describe outreach efforts and results	<p>The School of Trades and Industrial Technologies has been an active partner with multiple constituents in the greater Long Beach area including LBUSD, the Port of Long Beach, the City of Long Beach and surrounding areas, Economic and Resource Development, Industry and Professional Advisory groups, employee unions and service organizations. The School has ongoing relationships with all of these organizations in an effort to support,</p>

	prepare and train a viable workforce that meets industry and community needs. The School has established and maintains a number of strategic educational partnerships that benefit our students with institutions such as Embry-Riddle Aeronautical University, California State University Long Beach, California State University Dominguez Hills, California State University Los Angeles, Cal Poly Pomona, and Cal Poly San Luis Obispo.
18. Describe grants initiated	With assistance from the Economic and Resource Development department, grants have been secured to acquire new industry standard training equipment to support training in the Advanced Transportation Program (Alternative Fuels). Departments in the School are eager to partner on grant funded opportunities that support program development and enhancement in order to continually align our programs with industry standards and needs.
19. Describe economic development activities	The Advanced Transportation Program (Alternative Fuels) at Cabrillo High School provides college level instruction at the high school site and provides college and career pathways for high school students to continue their studies at LBCC and beyond. A similar program in Architecture, Construction and Engineering (A.C.E.) offers classes on campus at LBCC for students at Jordan High School to receive advanced level instruction and the opportunity to access college and career pathways. In addition, an Engineering Technician pathway is currently under development.
20. Describe internal and external partnerships	The School of Trades and Industrial Technologies has numerous partnerships with business and industry including Boeing Corporation, California Division of Apprenticeship Standards, Cummins Corporation, Freightliner Corporation, Hyundai Corporation, Lincoln Electric, M.A.T.E. Center, Pacific Maritime Association, SSA Recycling, Toyota TABC, and the Port of Long Beach. The School also serves as a CISCO regional training provider.
21. Describe opportunities in the internal and external communities	Green Technology is making its way into each of our programs and the related technology. Students with advanced training and understanding of this emerging technology will be highly sought after in the job market. Using the CTE Assessment process currently being developed and tested at the college, our departments will have additional tools to measure their alignment with industry standards, which will give our students a competitive advantage as they enter the workforce.
22. List major accomplishments	The Aviation Maintenance program completed its Program Assessment Plan. The program acquired some new instructional equipment (PT-6 Turbo-prop Engine) which will enable students to learn on modern technology. The program continues to be one of the highest performing schools in terms of student pass rates on the FAA Certification Exams, following completion of the program at LBCC. In Drafting/Architecture, students successfully graduated and entered upper division programs at the Southern California Institute of Architecture (SCI-ARC) and California State University of Los Angeles. Drafting/Architecture students won various awards at "Design Village", a National Competition held at the California Polytechnic University of San Luis Obispo. The program awarded numerous Associates of Science Degrees and Program Certificates of Accomplishment. A Credit by Exam Articulation Agreement between LBUSD and the LBCC Architecture Department was finalized and approved, creating a formal pathway for students. In Air Conditioning/Refrigeration, eight students passed the EPA section 608 test and received their universal license. The program also acquired new technology including an infrared camera, that will help train students

	<p>on the latest technology.</p> <p>The Electrical Technology department started offering the solar classes as for credit classes (ELECT 261) and integrated the solar training material into ELECT 261 & 262. The program acquired new solar training equipment and materials through the VTEA grant process, which will enable students to work with emerging technologies. The program also provided training in underwater robotics to teachers from seven LBUSD middle schools and hosted the underwater robotics regional competition for middle and high schools. The program continued its success in having students placed in high level technology jobs in both on-shore and off-shore work environments. Furthermore, students were hired by Louisiana State University, Woods Hole Oceanographic Institute and MillenWorks (robotics). LBCC has established and maintains a highly regarded FAA Certified Airframe and Power Plant Training Program which has among the highest student retention and success rates of any program in the college. The School has achieved improved success, retention and completion rates and is committed to improving the success of our students in future semesters. Numerous degrees and program certificates were completed by students. In Horticulture, a partnership with the science department has been developed to enhance the outdoor gardens with the purpose of using them as a learning tool by the science and trade students.</p> <p>In Manufacturing Technologies, the Welding and Sheet Metal programs have now moved into new facilities in the Tech I building. The programs received new equipment to enable students to learn using the latest technology available. The program continued with the development of DLA's for the CTE Center to increase academic disciplines and skills related curriculum in support of the the mission of the college and the student success initiative.</p> <p>The Automotive program has benefited from a growing partnership with Hyundai Corporation and received donations that provide students with new technology to learn from. The program is going through the NATEF certification process to become recertified in areas that were certified in the past, and to become certified in some areas that had not previously been NATEF certified. The Advanced Transportation program continues to offer extensive training through contract training and community education, providing individuals and companies with outstanding training on a variety of topics related to Alternative Fuels and Advanced Transportation.</p>
23. Areas in need of improvement	As the School and the College continue manage and operate in a challenging fiscal environment, the School needs to increase budget opportunities and efficiencies in order to offer additional sections of instruction to serve the students and enable them to complete course sequences and thus certificates and degrees in a more timely way.
24. Additional comments.	
25. Names & titles workgroup members	Adrian Erb, Dan Perkins, Don Sullivan, Javier Rivera, Patrick Heeb, Scott Fraser, Winford Sartin, Tina Scruggs, Mon Khat, Greg Schulz

Summary Unit: School of Trades and Industrial Technologies

Goal Priority: 1

Goal: Improve the rates of student success including certificate and degree completion

Supported Department Goals:

Construction Trades Dept. - Increase the number of certificates and degrees and Expand the evening courses to include finish carpentry, home remodeling, and other trade related classes.

Air Conditioning/ Refrigeration Dept. - Increase the rates of students obtaining entry level positions in the HVAC/R industry and increase passing rates for EPA section 608 of the Clean Air Act licensing exams.

Drafting/Architecture Dept. - Develop and implement evaluations of the Architecture and Mechanical programs, including an assessment of how the needs of special populations are being met and provide an environment to prepare special populations to succeed in our high-skill, high-wage and high-demand occupations that our programs teach.

Type of Resource Requested: Software

Resources Requested: Assessment related software

Estimated Cost: \$10,000

Year: 2011-2012

Suggested Funding Source: VATEA

Comments: Need to develop SLOs and pathways to create student success in the workforce and in higher education.

Type of Resource Requested: Personnel - Faculty

Resources Requested: Personnel - Faculty

Estimated Cost: \$10,000

Year: 2011-2012

Suggested Funding Source: Pathway Grants

Comments: Need to develop SLOs and pathways to create student success in the workforce and in higher education.

Type of Resource Requested: Supplies

Resources Requested: Instructional supplies

Estimated Cost: \$10,000

Year: 2011-2012

Suggested Funding Source: Grants

Comments: Instructional related supplies to assist with student learning

Summary Unit: School of Trades and Industrial Technologies

Goal Priority: 2

Goal: Improve students' preparedness and competencies for the continually changing jobs in workforce and industry

Supported Department Goals:

Aviation Dept. - Standardization of Program Documentation - Curriculum; Student Learning Objectives / Outcomes; Course Syllabi (8); Program Syllabus (1); Testing Format; Grading Rubric; Progress Reports; FAA Permanent Student Records; Lesson Plans; Project Sheets; Assessment Documentation

Air Conditioning/Refrigeration Dept. - Develop "Green" solar renewable and sustainable Energy Technology curriculum and courses to meet the changing industry and students needs and increase the rates of students obtaining entry level positions in the HVAC/R industry

Construction Trades Dept. - Infuse green technology in the existing curriculum and Incorporate technology in all the trade courses.

Electrical Dept. - Solar Program Development - Continued expansion of the solar/green classes and continued program expansion and the development of a class to support Hydraulic and Pneumatic Control systems in response to industry needs, as well as Continued program expansion and the development of a class covering Instrumentation and Advanced PLC programming in response to industry demands

Manufacturing Technologies Dept. - Modernize curriculum and pursue collaboration with other programs in order to implement curriculum and Through the establishment of an Precision Sheet Metal Manufacturing Advisory Committee, develop a curriculum that would support a Precision Sheet Metal Manufacturing program

Drafting/Architecture Dept. - Expand and modernize our Tool Design, Mechanical Design and Architectural Programs. Include faculty training to use technology, providing students with the skills needed to enter technology fields, create an appropriate safe environment that simulates industry through the use of state of the art instructional equipment. Build close relationships with industry to provide internships, job shadowing and mentoring programs to expand student experience and faculty awareness. In addition, strengthen the academic and career and technical skills in the Architecture and Mechanical Programs through the integration of academics within our classes and programs and provide students with strong experience in our programs and understanding of all aspects of an industry. Create pathways to certificates and degrees that involve middle skills and prepare students to be employed with above living wage pay in a competitive labor market.

Automotive Dept. - Pursue NATEF recertification and/or certification for all areas in the program curriculum, in order to better prepare students for the workforce.

Type of Resource Requested: Equipment
Resources Requested: Solar Learning Lab equipment
Estimated Cost: \$125,000
Year: 2011-2012
Suggested Funding Source: VATEA
Comments: Supports the development and expansion of a CTE pathway.

Type of Resource Requested: Equipment
Resources Requested: Hydraulic and Pneumatic Lab equipment
Estimated Cost: \$75,000
Year: 2011-2012
Suggested Funding Source: VATEA
Comments: Supports the development and expansion of a CTE pathway.

Type of Resource Requested: Equipment
Resources Requested: Automated Pipe (cutting, beveling, welding) equipment and FANUC Robot and associated equipment used in Welding
Estimated Cost: \$155,000
Year: 2011-2012
Suggested Funding Source: VATEA
Comments: This equipment supports the goal of reengineered curriculum to provide students with advance welding / cutting processes and techniques. Automated Robot as an instructional tool to do repetitive type jobs as programmed. This will keep students current with advance welding processes. Supports manufacturing/engineering pathway.

Type of Resource Requested: Equipment
Resources Requested: Koike Aronson 5' x 10" CNC Plasma Table/with related software must be trained in software design, programming and operation to be successful in a metalworking career, Software for PlasmaCam cutting system and Precision punch and dies for the Press Brake.
Estimated Cost: \$104,000
Year: 2011-2012
Suggested Funding Source: VATEA
Comments: Modern metal fabrication techniques employ automated CNC type machinery. Students will have access to current technology which will prepare them for entry into the workforce.

Type of Resource Requested: Equipment
Resources Requested: VRTEX 360 SIM Welder and associated software.
Estimated Cost: \$60,000
Year: 2011-2012
Suggested Funding Source: VATEA
Comments: To keep curriculum current in order to meet the needs of our students and industry. Supports manufacturing/engineering pathway.

Type of Resource Requested: Equipment

Resources Requested: 20 ton Trumpf CNC Turret Punch and related CNC software for Sheet Metal program.

Estimated Cost: \$225,000

Year: 2011-2012

Suggested Funding Source: VATEA

Comments: To keep curriculum current in order to meet the needs of our students and industry. Modern metal fabrication techniques employ automated CNC type machinery. Students must be trained in software design, programming and operation to be successful in a metalworking career.

Summary Unit: School of Trades and Industrial Technologies

Goal Priority: 3

Goal: Improve and update our instructional facilities to meet and align with the needs of industry

Supported Department Goals:

Aviation Dept. - Modernization and use of Technology - Replacement of Engine Test Cell and/or unserviceable and/or outdated training equipment with current industry standard technology

Electrical Dept. - Solar Program Development - Continued expansion of the solar/green classes and continued program expansion and the development of a class to support Hydraulic and Pneumatic Control systems in response to industry needs, as well as Continued program expansion and the development of a class covering Instrumentation and Advanced PLC programming in response to industry demands

Drafting/Architecture Dept. - Expand and Modernize Expand and modernize our Tool Design, Mechanical Design and Architectural Programs. Include faculty training to use technology, providing students with the skills needed to enter technology fields, create an appropriate safe environment that simulates industry through the use of state of the art instructional equipment.

Automotive Dept. - Pursue NATEF recertification and/or certification for all areas in the program curriculum, in order to better prepare students for the workforce.

Type of Resource Requested: Facilities

Resources Requested: Drafting/Architecture Dept. - See department plans for additional detail

Estimated Cost: \$87,000

Year: 2011-2012

Suggested Funding Source: Other

Comments: Expand and modernize our Tool Design, Mechanical Design and Architectural Programs. Include faculty training to use technology, providing

students with the skills needed to enter technology fields, create an appropriate safe environment that simulates industry through the use of state of the art instructional equipment and training facilities.

Type of Resource Requested: Equipment

Resources Requested: Drafting/ Architecture Dept. - See department plans for additional detail (Funding source possibilities - VTEA, or other pathway related grants)

Estimated Cost: \$593,400

Year: 2011-2012

Suggested Funding Source: VTEA

Comments: Expand and modernize our Tool Design, Mechanical Design and Architectural Programs. Include faculty training to use technology, providing students with the skills needed to enter technology fields, create an appropriate safe environment that simulates industry through the use of state of the art instructional equipment and training facilities.

Type of Resource Requested: Other

Resources Requested: Facilities enhancement requested related to engine test cell or equivalent to deliver instructional content in alignment with industry standards.

Estimated Cost: \$2,500,000

Year: 2011-2012

Suggested Funding Source: Other

Comments: Aviation Maintenance Dept. - - Modernization and use of technology - Replacement of Engine Test Cell and unserviceable and/or outdated training equipment with current industry standard technology

Summary Unit: School of Trades and Industrial Technologies

Goal Priority: 4

Goal: Provide relevant professional and staff development opportunities to ensure that our programs keep pace with the rapid technological changes and improvements

Supported Department Goals:

Drafting/Architecture Dept. - Expand and modernize our Tool Design, Mechanical Design and Architectural Programs. Include faculty training to use technology, providing students with the skills needed to enter technology fields, create an appropriate safe environment that simulates industry through the use of state of the art instructional equipment. Build close relationships with industry to provide internships, job shadowing and mentoring programs to expand student experience and faculty awareness. Provide in-service and pre-service professional development programs to faculty, on topics including effective integration of academics and CTE, effective teaching skills.

Automotive Dept. - Pursue NATEF recertification and/or certification for all areas in the program curriculum, in order to better prepare students for the workforce.

Type of Resource Requested: Professional Development

Resources Requested: Resources to provide relevant, up-to-date training for LBCC faculty, the faculty at our feeder schools (LBUSD) and local industry (with the goal of networking and leveraging resources with industry as well). Professional development should also ensure that faculty and personnel stay current with all aspects of an industry; involve internship programs that provide relevant business experience; and train faculty in the effective use and application of technology.

Estimated Cost: t.b.d.

Year: 2011-2012

Suggested Funding Source: Other

Comments: Identify professional development opportunity needs. Obtain funding for training series. Explore sponsorships from industry.

Summary Unit: School of Trades and Industrial Technologies

Goal Priority: 5

Goal: Increase the number of industry partners connected to our programs

Supported Department Goals:

Manufacturing Technologies Dept. - Through the establishment of a Precision Sheet Metal Manufacturing Advisory Committee, develop a curriculum that would support a Precision Sheet Metal Manufacturing program.

Drafting/Architecture Dept. - Build close relationships with industry to provide internships, job shadowing and mentoring programs to expand student experience and faculty awareness. Create pathways to certificates and degrees that involve middle skills and prepare students to be employed with above living wage pay in a competitive labor market.

Automotive Dept. - Pursue NATEF recertification and/or certification for all areas in the program curriculum, in order to better prepare students for the workforce.

Type of Resource Requested: Supplies and possibly personnel related costs

Resources Requested: Personnel and supplies to support articulation efforts.

Estimated Cost: \$10,000

Year: 2011-2012

Suggested Funding Source: Other

Comments: Create CBE Articulation agreements and develop pathways with local high schools that are part of LBUSD as well as with four-year universities