



**NAM – Endorsed Manufacturing Skills
Certification System**

Implementation Plan

For

Ivy Tech Community College

February 18th, 2011

Implementing the NAM-Endorsed Manufacturing Skills Certification System at Ivy Tech Community College February 18th, 2011

Ivy Tech Community College (Ivy Tech) and the State of Indiana are well positioned to implement the NAM-Endorsed skills system. Ivy Tech is Indiana's largest public postsecondary institution and the nation's largest singly accredited statewide community college system with more than 165,000 students enrolled annually. Ivy Tech has 30 campuses positioned throughout Indiana. Ivy Tech serves as the state's engine of workforce development, offering affordable degree programs and training that are aligned with the needs of its community along with courses and programs that transfer to other colleges and universities in Indiana. The College is accredited by the Higher Learning Commission of the North Central Association.

Ivy Tech offers a wide array of manufacturing education programs. The academic schools at Ivy Tech offer programs in Welding, Machine Tool, Industrial Technology, Advanced Manufacturing, and Engineering Technology that are linkable to the NAM-Endorsed Certification System. The division of Workforce and Economic Development (WED) engages business and industry to train incumbent, dislocated, underemployed, and incarcerated students across the state. The WED division uses credit and noncredit programming strategies to deploy training and certification opportunities to the aforementioned audiences. The WED division within each region works to train and certify individuals in various manufacturing sectors through packaged educational programs for business, industry, grants functions, and funded workforce operators partnered with Ivy Tech. The WED division maintains at least one certification center in each region, as a portion of the larger statewide system of Workforce Certification Centers that certify more than 40,000 candidates per year. Many of the capacity to certify processes and questions have been addressed within the statewide certification system at Ivy Tech.

Ivy Tech has been a leader in manufacturing education since inception in 1963. The College first started as Indiana Vocational Technical College or IVTC or as nicknamed early in the charter "Ivy Tech". The essential programs that have developed the Indiana workforce in plant floor manufacturing have developed through partnerships with education, industry, and government. Ivy Tech has grown into a trusted position within the Indiana manufacturing community as dependable to ensure both quality instruction and valued pricing. Indiana supports Ivy Tech with partner organizations that help guide decisions within sector-based initiatives. Ivy Tech currently trains and certifies in several of the workforce credential areas including MSSC, AWS, and NIMS.

Ivy Tech has existing partnerships with Conexus Indiana and Purdue University. These institutions were also endorsed by the Manufacturing Institute to implement the NAM-Endorsed Manufacturing Skills Certification System. Ivy Tech Community College has recently concluded a successful DOL High Growth grant for the Advanced Manufacturing sector in Indiana. Both Conexus Indiana and Purdue were aligned as institutional partners during the DOL grant.

Ivy Tech Community College System Components

Academic Programs

Ivy Tech offers more than 150 academic programs statewide. Each campus provides a wide variety of program options based on community need. Ivy Tech offers Associate of Science, Associate of Applied Science, Technical Certificate, and Certificate programming in nine separate Schools of Instruction. The primary academic schools associated with the implementation of the NAM-Endorsed skills system are the School of Technology and the School of Applied Science and Engineering Technology and are represented within each of the 14 Ivy Tech Regions. The primary School associated with the NAM-Endorsed Manufacturing Skills Certification System is the School of Technology. The School of Technology currently offers programs in Advanced Manufacturing, Design Technology, Industrial Technology, Machine Tool Technology, and Manufacturing Production and Operations which are linkable to the NAM-Endorsed Manufacturing Skills Certification System. The School of Applied Science and Engineering Technology offers programs in Electrical Engineering Technology, Mechanical Engineering Technology, and general Engineering Technology which offer opportunity to implement the NAM-Endorsed Manufacturing Skills Certification System through certification of students and partnership with Purdue on transfer activities. Within each of the 14 regions an organizational structure exists that is based on a Dean of each school of instruction, a program chair with direct oversight of the technical program, and technical faculty members that possess expertise in a specific program area. A central statewide structure of administration exists to oversee each of the program areas of operation and interface with each region at the Dean, Vice Chancellor, and Chancellor level of regional administration.

Curriculum Committees

A statewide curriculum committee exists for each of the technical program areas. Each region that implements a technical program has opportunity for representation on the statewide curriculum committee. Currently, curriculum committees exist for Welding, Machine Tool, Industrial Technology, and Advanced Manufacturing. These committees will work directly to design structure and influence decision processes to ensure NAM-Endorsed Manufacturing Skills Certification System implementation within academic programs of study at Ivy Tech. The curriculum committees will be convened in the spring and fall semesters of each academic year to provide leadership on a variety of subjects including embedding of certifications, audit of current programs, development of certification metrics, linkage to industry, and deployment strategies. Further, these academic program committees will begin a transformative process of redesign of critical technical programs into a Technical Institute model that supports cohort based accelerated credential pathways attainment for Ivy Tech students.

Advisory Committees at Ivy Tech

Advisory committees are utilized within Ivy Tech to provide direct input to curriculum committees from external partners. The advisory boards provide definition of skills required of program graduates, types of lab equipment students should be exposed to during coursework, and the actual material and duration of time spent on that material. The current advisory board implementation scheme calls for each program within an Ivy Tech region to enlist and meet with a group of advisory board members twice each year. Advisory board members represent business and industry, secondary schools, post-secondary institutions, and partnership institutions which provide direct input to academic programs which creates a relevant curriculum of study. The curriculum committee structure is currently being analyzed and a new structure is ready to be implemented. This new structure would provide one statewide advisory board for each sector or program area.

Technical Institute of Indiana at Ivy Tech

Discussions among Ivy Tech, the Indiana Commission for Higher Education, Lumina Foundation for Education, and Complete College America, have led to a plan for a new program acceleration and credential attainment strategy at Ivy Tech. The prevailing academic model at Ivy Tech forces most community college students to pursue a slow, part-time approach to their credential attainment. These new programs will not represent a single, one-size-fits-all program. Rather, this is a complex strategy that, over time, will promote multiple pathways to credentials, including MSSC, AWS, and NIMS credential attainment.

Several months ago, Ivy Tech began a series of discussions with state and national leaders in postsecondary education to explore how the College might boost completion rates and graduate more students with credentials that have high labor market value. These discussions have led Ivy Tech to an ambitious “acceleration” strategy that will drive some fundamental changes in the structure of our certificate and degree programs. These new educational pathways will allow students to increase the pace of study which will lead to increases in program graduation rates, total completions, and certification attainment. Ivy Tech can move to a national leadership position in program completion and credential attainment through creation of a new instruction model with strategies that implement compression and acceleration of career pathways.

Opportunities – Ivy Tech intends to:

- Embed National Certifications into Technology Institute programs for Machine Tool (NIMS), Manufacturing (MSSC), and Welding (AWS)
- Embed WorKeys and National Career Readiness Certificate programming into Technology Institute of Indiana programs
- Enact Certification crosswalks for AWS, MSSC, and NIMS to allow for competencies to be met in program with existing certifications

Ivy Tech recently changed instructional policy to encourage the usage of appropriate certifications within courses. This institutional policy change and paradigm shift allows for national certifications to be embedded within individual courses and allowing for fees to be charged that pay for those embedded certifications. The

policy change also represents a strong stance that these embedded certifications will represent a substantial portion of the grade activity within a course. Students will be required to take the certification and report scores to the instructor to ensure that course grading requirements are met. This sustainable process will ensure that students take required assessments through the Workforce Certification Centers located within regional Ivy Tech Campuses.

Ivy Tech is moving forward on the construction of the Technology Institute foundations coursework that will be based on the Keytrain product. Ivy Tech will adapt the product to ensure that students within the Institute will have ample opportunity to complete National Career Readiness Certificate NCRC activities.

Ivy Tech will provide access to advanced standing credit in degree programs that embed national certifications. Students that produce valid certification credentials will be allowed to crosswalk these certifications into academic credit within specified degree programs. This certification crosswalk system will ensure multiple access points within degree and Institute programs for existing credential holders.

Challenges – Barriers that must be overcome to ensure success

- Train current and new instructors to ensure a pool of certified instructors - Capacity Building
- WorkKeys is currently offered only through the division of Workforce and Economic Development – limited access
- Implementation of new program capacity issues

In order to ensure successful implementation of the NAM-Endorsed Skills Credential System at Ivy Tech a substantial faculty development process must be adopted. Grant funds will be allocated to provide training for current faculty members teaching courses that will have certifications embedded into the course structure. Ivy Tech receives funding from the State of Indiana to provide workforce certification services to the residents of Indiana. A portion of this allotment will be leveraged to provide training activities for MSSC, AWS, and NIMS credentials.

The development and implementation of the Ivy Tech Technical Institute will result in increased resources in the form of space, equipment, and qualified instructors. The capacity increase will result in additional funding being required for these activities. Ivy Tech will shoulder the initial costs of development and deployment but increased funding is being sought in the form of Department of Labor grants to ensure success. Ivy Tech will leverage multiple grant funding resources to ensure appropriate implementation of the NAM-Endorsed Skills Credential System.

Workforce and Economic Development at Ivy Tech

Ivy Tech is the state's largest workforce training provider. Ivy Tech provides over one million hours of training annually to statewide business and industry partners. Ivy Tech prepares workers for jobs in Indiana's highest priority fields including: advanced manufacturing, logistics, and life sciences, ensuring that Indiana's economy will stay strong, long into the future. The Ivy Tech Workforce and Economic Development

(WED) division regularly evaluates, analyzes and recommends training that effectively addresses skill gaps in Indiana Industries. Training programs are designed to provide flexible and affordable training and consulting services specifically designed to meet organizational needs. The Regional WED divisions currently offer training programs aligned with the NAM-Endorsed Manufacturing Skills Certification System. These training activities are complimented through a statewide system of Workforce Certification Centers that function as an extension of the regional WED operations.

Workforce Certification Centers

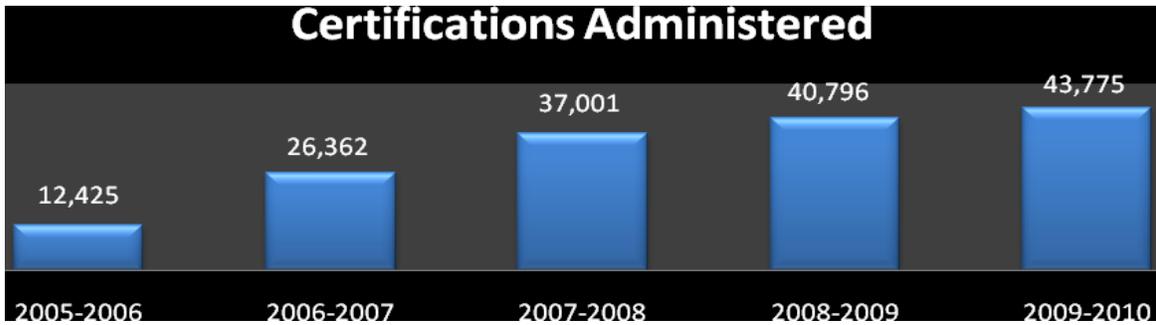
Since 2001, Ivy Tech has taken a system-wide approach for developing a network of Workforce Certification Centers to help support the increasingly important role of nationally recognized certification and licensure to the State's economic and workforce development efforts. The College currently has 24 high stakes testing centers statewide, each a part of the Ivy Tech campus network.

The certification centers began with a focus on Information Technology (IT) certification exams. The College began implementing certification exams into the curriculum (credit and non-credit) in order to provide students with portable credentials. There has since been significant growth within the system, not only in the number of exams that are now available for testing through vendor partnerships (4,095), but also through acting as a full service provider to State entities such as Department of Homeland Security and Indiana State Department of Health. The College has additionally increased its service to include assessment exams including: skills assessment, job profiling and pre-employment exams. In 2009-2010, more than 222,000 such assessments were administered statewide. The number of certifications administered and achieved grew significantly between 2005-06 and 2006-07 based on the development of our own exam delivery platform and various new partnerships.

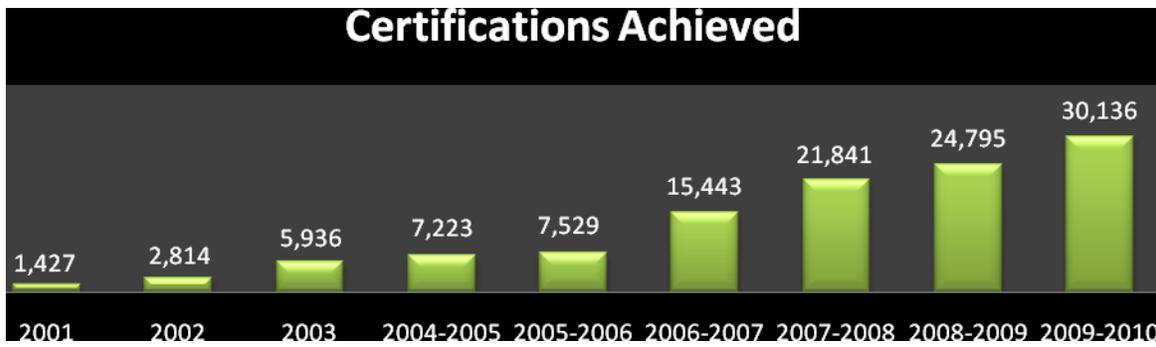
Since 2001, the College has utilized an annual legislative appropriation to support new and emerging technology for the testing centers and to add additional proctoring and administrative staff. Equipment upgrades including security devices such as: cameras, monitors, sound equipment, and wiring have been added to enable secure high stakes testing environments. Ivy Tech purchased computer hardware and software to include: servers, additional memory storage, removable hard drives, new and additional computers to accommodate growth and digital cameras for exam candidate check-in. Ivy Tech has supported faculty training and certification within the system.

Ivy Tech will work with the Institute to develop the best practice case scenario with respect to the current Workforce Certification System that has developed within the State of Indiana. Ivy Tech will endeavor to document the current system and provide detail on the critical connection points that are required to develop, implement, and maintain a statewide certification center system. Ivy Tech will further provide evidence of the sustainable education practices that allow for WED and Academic training and education solutions to funnel students to the Workforce Certification Centers.

The following pages serve as a foundational view of the types of workforce certifications that take place within the statewide workforce certification system at Ivy Tech.



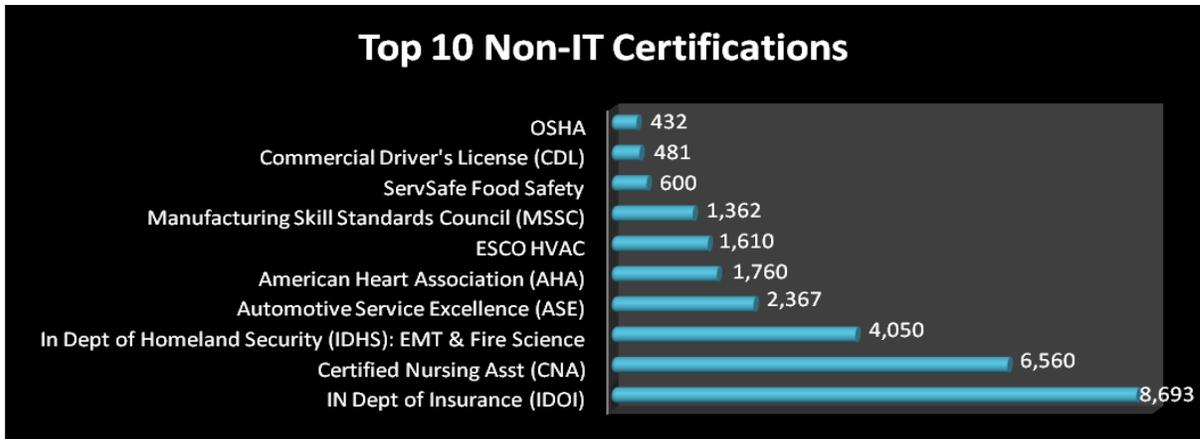
Total Certification Growth over the Past Five Years at Ivy Tech



Number of Certifications Achieved at Ivy Tech Certification Centers



Ivy Tech Faculty Certified through Certification Centers



Top Non – Information Technology Certifications attempted in 2009 – 2010

NAM-Endorsed Manufacturing Skills Certification System Components at Ivy Tech

Manufacturing Skills Standards Council Certifications

Ivy Tech has been using the MSSC Certified Production Technician (CPT) Certification since 2006. Ivy Tech has an exclusive contract with MSSC that allows only Ivy Tech the ability to certify using the CPT assessments across the state. Because of the large manufacturing base in Indiana, the MSSC CPT Certification base has grown since being implemented at the College in 2006. The College currently offers the CPT certification through WED offerings in multiple regions throughout the state. The College embedded the MSSC CPT certification within the Advanced Manufacturing degree that was instituted at ten regional campuses in 2007. Currently, the Advanced Manufacturing program enrollment is at 265 students.

Opportunities – Ivy Tech intends to:

- Embed MSSC National Certifications into Industrial Technology courses that match i.e. Safety assessment in a Safety course
- Increase regional adoption of CPT assessments
- Create a climate of demand for the certification i.e. Pull system

Ivy Tech will assess the current status of manufacturing programs with respect to the NAM-Endorsed Skills system and develop a strategy to implement the appropriate certifications within Ivy Tech courses and programs. This on-going activity will be carried out by Ivy Tech curriculum committees and will be a leveraged resource expense shouldered by Ivy Tech. This activity will meet the requirements of the NAM-Endorsed Skills System grant structure as well as provide critical movement on Ivy Tech's current strategic plan – Accelerating Greatness 2013.

Ivy Tech will work with Conexus Indiana to develop the critical business case for manufacturing certifications to be used within the appropriate Indiana Industries. Ivy Tech and Conexus will survey Indiana Industries to determine the current level of

certification acceptance and develop a strategy to educate and deploy appropriate certification across the state. The business case will further be outlined through a series of Industry Summits to be held in critical manufacturing heavy portions of the state. This business case will synthesize the critical findings related to outfitting a credentialed workforce.

Challenges – Barriers that must be overcome to ensure success

- Need for Certified Instructors – Capacity Building
- Need for quality information and understanding of certification
- Educate industry on value of national certification

Ivy Tech also has implemented the Certified Logistics Associate (CLA) and Certified Logistics Technician (CLT) certifications within the state. The CLA and CLT certification base has had minimal growth within the system. The College does not currently offer the CLA or CLT certification embedded in a degree program. Work is underway to embed both CLA and CLT certifications into an Advanced Manufacturing course. Work should be completed during the first quarter of 2011. Ivy Tech has been working with Conexus Indiana on an on-going project to develop an entry-level logistics program for central Indiana. The phase I logistics certification program has the CLA certification embedded in the program. The program will pilot in early January and is being funded through the Indianapolis Private Industry Council. Development of a new Logistics degree at Ivy Tech has begun with help from Conexus Indiana.

Ivy Tech, the Institute, and Conexus Indiana will formulate the required business case and develop a strategy of deployment across the state. Ivy Tech will work directly with Indiana companies to provide valued training and education services that promote the NAM-Endorsed Skills System to Indiana manufacturers. Ivy Tech will embark on the development of statewide sector advisory boards that can help in this process. The statewide manufacturing advisory board will work to implement and endorse critical skills and skill certifications that ensure Indiana's future as a dominant and capable manufacturing state.

Opportunities

- Embed MSSC CLA and CLT credentials in Advanced Manufacturing degree
- Restructure current Logistics degree and implement within more regions
- Assess the appropriate placement of APICS certification within Ivy Tech.

Ivy Tech and Conexus Indiana have developed an entry level logistics training program that uses the MSSC CLA and CLT certification to ensure competency in logistics. This program was developed through a combined partnership activity that brought critical logistic companies, Ivy Tech, and Conexus to the table to learn and develop the training program. Ivy Tech will continue work to embed the CLA and CLT certifications within the Advanced Manufacturing program to provide for credit crosswalk into that program.

Ivy Tech has now embarked on phase two of the logistics career pathway by beginning to evaluate and revise the current logistics degree programs at Ivy Tech. Ivy Tech will work with Conexus to ensure that Indiana companies have access to skilled employees in logistics throughout the State of Indiana.

Challenges

- Certification fees must be voted into courses by multiple committees
- Program instructors will be required to certify – capacity issues
- Many Logistics firms hire temps – not willing to fund training

Through the appropriate curriculum committees the project director will ensure that all appropriate certifications are embedded into existing courses. The project director will further work with the curriculum committees to develop new courses that can embed existing appropriate workforce certifications.

The project director will work with the Workforce Certification Committee internal to Ivy Tech to secure additional funding for instructor training and certification in all areas related to the NAM-Endorsed Skills System.

Ivy Tech and Conexus will develop strategies to work directly with temp agencies to train entry level employees. Ivy Tech will approach the appropriate regional operators to secure funding opportunities to train underemployed and dislocated workers in the logistics sector.

Development of Welding Institute - American Welding Society (AWS) Certifications

Welding has a long history at Ivy Tech. Once a separate program at Ivy Tech, Welding is an identifiable skill in many occupations within the industrial, manufacturing, and advanced manufacturing sectors in Indiana. Ivy Tech currently offers welding technology courses within the Industrial Technology program at the Certificate, Technical Certificate, and Associate of Applied Science degree levels. Currently, across the state, most Ivy Tech regions run some form of welding coursework through some form of academic, continuing education, or customized courses. As degree completions dwindle within welding at Ivy Tech, and the acceptance of certified AWS credentials has mounted, a movement towards a new program management model has taken place at several locations. The Welding Institute concept is one such model.

The Welding Institute at Ivy Tech Community College provides credit and non-credit welding training courses that lead to certification. This American Welding Society (AWS) based education and training gives Indiana employees certified skills needed in the advanced manufacturing and construction industries. The Welding Institute combines innovative short-term accelerated certified training, nationally recognized certifications, and academic programming that allow students access to a variety of options. Courses are scheduled both on-campus and on-site within industry. This program provides a return on investment by improving employees' skills and increasing job satisfaction to employers.

Instructional areas included in the institute include: safety and OSHA requirements, welding processes and equipment, engineering drawings and welding symbol interpretation, welding inspection and testing, welding metallurgy, electrical fundamentals, and welding codes and certifications.

Skills instruction includes training and practice with the primary processes found in industry:

- Shielded Metal Arc Welding (Stick)
- Gas Metal Arc Welding (MIG)
- Gas Tungsten Arc Welding (TIG)
- Flux-cored Arc Welding (FCAW)
- Oxy-fuel Welding (OFW)
- Oxy-fuel Cutting (OFC)
- Plasma Arc Cutting (PAC)

Students may pursue programs of study that provide instruction in flat, horizontal, vertical, and overhead positions on various materials including steel, stainless steel, and aluminum on a variety of weld joints.

In addition to preparing the emerging worker with new skills and certifying incumbent workers, many employer services are available through the Institute. These include:

- Skills Assessments for individual Workers
- Designed Training Program for the Company
- Qualification of Welding Procedures according to AWS Standards
- Certification of employee(s) to Qualified Company Procedures
- Consulting on Design of New Welding Processes

Most regions within the Ivy Tech system have training facilities that can train students in welding skills.

Opportunities

- Credential recognition within Industry is favorable in Indiana.
- Defined welding lab infrastructure across the state.
- Ability to bring welding certification to more regional locations favorable

The project coordinator will oversee the development of the Welding institute function within the larger Technical Institute at Ivy Tech. The AWS certifications will serve as the guiding foundations for the development of a competency based welding institute model that will ensure validated success and graduation rates while providing a mobile career pathway for students.

Ivy Tech with the help of a consultant will evaluate the current state of the welding programs and labs across the state. Equipment, space and instructor capacity will be assessed as the cohort based model is designed and implemented across the state. Ivy Tech will need to develop the AWS certified pool of existing instructors over a period of time.

Challenges

- Limited number of AWS certified instructors across the state.
- Limited number of AWS certified weld inspectors across the state.
- Acceptance of AWS certifications as individual course outcome certifications due to current general nature of coursework.

The project coordinator will work to provide training opportunities that will increase the number of AWS certified faculty at Ivy Tech at strategic locations across the state. An analysis of current levels of credentialed faculty at the instructor and the inspector level will be performed. The development of the Welding Institute format at multiple locations statewide will drive the need for qualified instructors. Qualified welders continue to top the list of hot jobs in Indiana.

National Institute of Metalworking Skills - NIMS

Currently, Ivy Tech has one standalone Machine tool program at Ivy Tech in Indianapolis. The majority of Ivy Tech regions once again run machining coursework available through Industrial Technology programs, apprenticeship programs, and custom training to Industry. Ivy Tech has long provided machinists, tool makers, die makers, mold makers, and even engineer's quality coursework in machining technology across Indiana. Recently, Ivy Tech started the process the reform and revitalize the existing Machine Tool curriculum to capture current skills requirements and embed national certifications into the curriculum. The National Institute of Metalworking Skills has been adopted as the occupational accreditation body to be utilized within the Machine Tool Technology program. The regional Machine Tool programs, faculty, and students will become certified through NIMS credentialing processes.

Several regions have begun the initial processes of pursuing NIMS certification. This process will need to be formalized in each location in which the degree will be offered. Ivy Tech will pursue embedding of NIMS credentials into existing coursework. Ivy Tech has successfully offered NIMS Computer Numerical Control (CNC) operations certification courses at several locations across the state over the past several years.

Opportunities

- Several Ivy Tech locations preparing to offer degree in Machine Tool in 2011.
- Embedding of certifications into coursework has been accepted by curriculum committee groups.
- Networks established to work directly with industry to promote NIMS certification.

The project director will ensure that Ivy Tech moves forward with program approval for the Machine Tool program at appropriate sites within Indiana. The revised program will be based on multiple NIMS credentials which will result in a credential of special merit from NIMS for students that finish the degree program. Machine Tool will also be converted to the Institute format that will be based on NIMS credentials.

Challenges

- Limited number of credentialed NIMS faculty members within Ivy Tech.
- Creation of credential crosswalk for academic credit.
- Embedding costs of certifications into coursework.

The project director in conjunction with the curriculum committee will provide for an instructor certification seminar in which key personnel from NIMS will travel to Indiana and provide a 3 – 5 day instructor certification session for Ivy Tech. The curriculum committee with guidance from the project coordinator will endeavor to embed certifications, create a certification crosswalk, and institutionalize the cost of certifications into classes.

NAM-Endorsed Manufacturing Skills Certification Workplan for Ivy Tech

Task 1 - Convene strategic college leadership from throughout the state to support implementation

Ivy Tech will convene both internal and external stakeholders representing the manufacturing sectors that are directly linked with the NAM-Endorsed Certification system. These session meetings will be used to promote, educate, and gain rapid acceptance of the individual certifications that make up the NAM – Endorsed Manufacturing Skills Certification System.

- Assign internal project manager to oversee development and implementation of NAM-Endorsed credential system at Ivy Tech.
- Convene internal regional Ivy Tech academic leadership administrators and present the NAM-Endorsed skills system to group. Provide an overview of the types of academic and short-term programs that will be affected through the implementation of the NAM-Endorsed credential system. The primary audiences will be the Executive Directors of Workforce and Economic Development and the Regional Academic Officers within the College.
- Convene internal Ivy Tech regional Workforce and Economic Development leadership administrators and present the NAM-Endorsed skills system to group. Provide an overview of the types of academic and short-term programs that will be affected through the implementation of the NAM-Endorsed credential system.
- Convene Ivy Tech Statewide Curriculum committees to look at adaptation of existing program models into NAM-Endorsed certification models.
- Invite credentialing body representatives to attend statewide curriculum committee meetings.
- In conjunction with Conexus Indiana, convene statewide internal and external manufacturing leadership at regional manufacturing summits to present the consolidated business case for adoption of NAM-Endorsed Manufacturing Skills Certification system. Five regional summits will be

scheduled with local employers throughout the state. Summits will take place in the Northwest, Northeast, Central, Southeast, and Southwest areas of the state. These summits will allow industry to view and understand the NAM-Endorsed skills system and on a larger scale understand the critical role that these certification play in providing a skilled workforce.

- Develop and implement a certification/skills survey to be administered to industry representatives prior to regional summits.
- Develop strategic leadership team to oversee construction, implementation, and assessment of Ivy Tech NAM-Endorsed Manufacturing Skills Certification system.
- Analyze Ivy Tech policy and amend policy to provide a climate that encourages certification embedding in courses, fee and pricing structure implementation, and program outcomes.

Ivy Tech will work during the first quarter of 2011 to develop the business case through internal, external, and combined sector committees. Committee development will come from five regional summits to take place during the second quarter of 2011.

Task 2 - Using real-time data on occupational, employment, and industry outlooks complete a job availability and sector growth analysis

Ivy Tech, with the help of the National Association of Manufacturers, Conexus Indiana and the Indiana Department of Workforce Development will look at current trends in Indiana manufacturing companies related to manufacturing occupations.

- Review and analyze current Indiana Department of Workforce Development data regarding occupations related to the NAM-Endorsed Manufacturing Skills Certification system areas of concentration.
- Review current Economic Growth Region data to assess types and kinds of occupations within specific regions of the state.
- Work with the Indiana Economic Development Corporation to ensure occupational trend analysis information matches requests from current and future visiting corporations.
- Utilize current Ivy Tech strategic planning exercises to analyze skill sets by occupation and degree structure in which skills sets are attained.
- Review and analyze regional manufacturing summit surveys to better understand current workforce needs.
- Utilize information obtained through industry advisory boards and accreditation groups to analyze existing and future programs of study.

Task 3 - Work with leadership team to map Advanced Manufacturing career pathways

Ivy Tech will partner with secondary, post secondary, and industry representatives to ensure that career pathways are available within the programs defined by the NAM-

Endorsed Manufacturing Skills Certification system. Ivy Tech Community College currently is participating in a large scale reform of secondary technical and vocational programs level within Indiana. Ivy Tech was invited to partner in this activity so that seamless program pathways could be built between the secondary schools and Ivy Tech. This restructuring has led to integrated pathways that will lead high school students from individual career interest areas to obtaining relevant career training at Ivy Tech.

Ivy Tech is also working to partner with several 4-year institutions in Advanced Manufacturing and Industrial Technology to further develop the program pathways to include multiple options of study after Ivy Tech.

- Work with the current Department Of Education (DOE) Career Pathways initiative to ensure transition and advanced credit placement of secondary students receiving certifications.
- Analyze current Advanced Manufacturing career pathway structure and reformat pathways based on sector data and current and pending articulation agreements.
- Develop and define the certification crosswalks needed to adapt relevant NAM-Endorsed certifications into academic credit.
- Work with the Institute and Purdue University to analyze the appropriate degrees and structures to utilize the Society of Manufacturing Engineering credentials.
- Work directly with Purdue to provide career pathways from Ivy Tech to Purdue University in the Engineering Technology disciplines.

Task 4 - Provide Technical assistance to audit current programs of study in manufacturing, aligning skills certifications to programs of study

Ivy Tech will conduct a program by program review of current programs and curriculum to determine the current state of operations with respect to program certification status, faculty certification status, and adequate lab space requirements. The audit process will strive to:

- Develop an internal Ivy Tech program matrix showing NAM-Endorsed certifications currently offered based on sector. An Analysis of Ivy Tech programs that have potential for inclusion will be performed by curriculum committees with the project coordinator.
- Develop a course certification matrix showing current and potential certification embedding possibilities.
- Determine appropriate implementation timelines for academic program implementation with help of Statewide Curriculum committees.
- Invite credentialing body representatives to attend statewide curriculum committee meetings.
- Secure Technical Assistance to facilitate an expedient solution to current asset mapping strategy.

Task 5 - Blueprint the process for assessment, testing, and credentialing of stackable certificates; and implement a plan to provide faculty professional development through instructor certification.

Ivy Tech Community College will define and document the current structure and status of the many Workforce Certification Centers found throughout the state. The operational blueprint can be used as a national model of Intra-State networked satellite testing centers. This strategic planning activity will result in capturing the current model which will be useful to present to other institutions and industry. The college will develop a faculty certification plan to train and certify existing and new faculty members to ensure faculty credential guidelines have been established and met within the NAM-Endorsed skills system implementation.

- Establish current operational structure within the Ivy Tech Workforce Certification Centers.
- Develop statewide pricing structure on certification assessments given to students through the Workforce Certification Center.
- Analyze the current status of faculty credentials with respect to the NAM-Endorsed skill system and formulate a plan to address faculty professional development.

Task 6 - Engage Indiana's four-year institutions to build credential pathways

Ivy Tech will continue to develop transitional programs that lead to distinct career pathways that include transfer options to Purdue across Indiana.

- Meet with Purdue to further develop the NAM-Endorsed Manufacturing Skills Certification.
- Look for common ground in programs that offer the NAM-Endorsed Manufacturing Skills Certification.
- Develop articulation agreements based on existing programs of study that have NAM-Endorsed certifications embedded.

Task 7 - Engage with Conexus to ensure stackable credentials feed into higher level credentials

Ivy Tech and Conexus will work to develop a rigorous skills template that ensures foundational certifications lead to higher levels of occupational certifications. Develop a plan to address the lack of stackable credentials within programs at Ivy Tech. Ivy Tech in conjunction with Conexus Indiana will validate and accelerate the construction of new credentials through current NAM-Endorsed accreditation bodies.

- Work to further develop skills templates with Conexus Indiana that identify the basic, intermediate, and advanced skills associated with each of the NAM-Endorsed credential areas.

- Determine through program gap analysis the Ivy Tech programs that would benefit from having higher level certifications.
- Engage industry partners, accreditation bodies, and sector partners to develop viable new industry credentials.
- Work with Conexus to drive a logistics based solution that will provide for educational levels that include CLA, CLT, and APICS as stackable credentials.

Task 8 - Work with Conexus to design and deploy an industry engagement strategy

Ivy Tech will work with Conexus Indiana to deploy an engagement strategy that provides important information while reaching multiple benefactors including potential students, students, potential employers, and current employers.

- Develop an Industry engagement strategy with Conexus that allows Industry to see the benefits of a certified workforce.
- Develop the “Business Case” for the NAM-Endorsed Manufacturing Skills Certification system within Indiana.
- Based on current and past success with the NAM-Endorsed certification base, develop a human resource model for understanding why certification of employees within Industry.
- Identify employer champions within Indiana.
- Design and deploy a targeted market approach with respect to communications on the NAM-Endorsed Manufacturing Skills Certification system.
- Capture employer success stories from past and current student training scenarios.

Task 9 - Link with current Dream It Do It Indiana campaigns

Ivy Tech Community College has worked with Conexus Indiana in the past to partner to develop interest in the current Dream It Do It campaigns that are currently being implemented in Northeast, Central, and Southwest Indiana. Ivy Tech has also worked with the EcO15 group from the Southeastern part of the state that has a unique Dream It Do It partnership that involves education, industry, and workforce development entities together for a common purpose to promote skills attainment for advanced manufacturing.

- Ivy Tech staff and faculty will continue to meet with Dream It Do It Champions across the state to provide support for a career pathways system that allows students to understand the truth about manufacturing careers.
- Regional Faculty and staff will attend Dream It Do It meetings to provide leadership with respect to Dream It Do It initiatives.
- Work with the Certification Centers both regionally and statewide to provide current and up-to-date information on the status of current levels of certification taking place within the College.

Task 10 - Enable the state to accelerate statewide deployment

Ivy Tech has a statewide structure the deployment process happens very quickly. Academic program rollout will happen during the fall semester 2011. Additional programs leading to additional workforce certifications will be developed throughout the grant life.

- Embed AWS certifications in Welding courses statewide.
- Embed NIMS certifications in Machining courses statewide.
- Embed MSSC coursework and certifications into existing programs.
- Develop certified programs through work of existing curriculum committees.
- Develop a statewide plan to obtain appropriate credentials for instructors teaching NAM-Endorsed manufacturing skills certification coursework.
- Disseminate appropriate course materials to regional certification instructors
- Develop and pilot short-term courses that result in NAM-Endorsed certifications.

Task 11 - Document success and share best practices

Ivy Tech will start immediately with the documentation of the existing programs in order to analyze and document the current state of deployment of the NAM-Endorsed Manufacturing Skills Certification system within Ivy Tech. During the course of the two year grant, Ivy Tech will present at required events, host partnership meetings, coordinate events, and host partners as required by the National Association of Manufacturers in the development of the NAM-Endorsed Manufacturing Skills Certification system within Indiana.

Project Summary

Through implementation of the outlined workplan and the NAM-Endorsed Manufacturing Skills Certification system within Ivy Tech, the demand for skilled manufacturing workers that have documented portable credentials in high demand manufacturing occupations can be met while providing upward career pathways for those same workers throughout Indiana.

Project Timeline Development

Grant Project Tasks	Quarter 4 2010	Quarter 1 2011	Quarter 2 2011	Quarter 3 2011	Quarter 4 2011	Quarter 1 2012	Quarter 2 2012	Quarter 3 2012
Task 1 - Convene strategic college leadership from throughout the state to support implementation	X	X		X		X		X
Task 2 - Using real-time data on occupational, employment, and industry outlooks complete a job availability and sector growth analysis		X	X					
Task 3 - Work with leadership team to map Advanced Manufacturing career pathways		X	X	X				
Task 4 - Provide Technical assistance to audit current programs of study in manufacturing, aligning skills certifications to programs of study		X						
Task 5 - Blueprint the process for assessment, testing, and credentialing of stackable certificates; and implement a plan to provide faculty professional development through instructor certification.			X	X				
Task 6 - Engage Indiana's four-year institutions to build credential pathways				X	X	X	X	X
Task 7 - Engage with Conexus to ensure stackable credentials feed into higher level credentials								
Task 8 - Work with Conexus to design and deploy an industry engagement strategy						X	X	X
Task 9 - Link with current Dream It Do It Indiana campaigns		X	X	X	X	X	X	X
Task 10 - Enable the state to accelerate statewide deployment				X	X	X	X	X
Task 11 - Document success and share best practices					X	X	X	X

Critical Year One Tasks

Develop Business Case – 1st Quarter – Asset Mapping Internal

Determine Occupational Demand – 1st Quarter

Develop Employer Summits – 2nd Quarter

Develop Instructor Training – 2nd and 3rd Quarters

Certify Instructors – 2nd and 3rd Quarters

Benchmark High Performers External – 3rd Quarter

Implement NAM-Endorsed Skills Certification System in fall 2011 semester – 3rd and 4th Quarters

Critical Year Two Tasks

Implement NAM-Endorsed Skills Certification System in Spring 2012 semester – 1st and 2nd Quarters

Analyze effectiveness of current NAM-Endorsed Skills Certifications – 2nd Quarter

Disseminate Critical findings to external stakeholders – 3rd Quarter