Wisconsin Youth Apprenticeship

INFORMATION TECHNOLOGY (IT)

PROGRAM GUIDE

Department of Workforce Development

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YOUTH APPRENTICESHIP
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Description

The information technology (IT) industry is among the economy's largest and fastest sources of employment growth[1]. U.S.-based companies will be looking to employ workers to serve both U.S. and global markets. Concurrently, rapid advances in technology have meant that today's global business structure has created a truly international IT employment marketplace[2].

The IT career cluster involves careers in the design, development, support, and management of hardware, software, multimedia, and systems integration. The IT industry is a dynamic and entrepreneurial working environment that has revolutionary impact on the economy and society. In addition to careers in the IT industry, IT careers are available in every all industries of the economy. This Youth Apprenticeship occupational area focuses on the pathways within the Information Technology (IT) industry: Network Systems, Information Support & Services, Web & Digital Communications, and Programming & Software Development[3]. Job growth in all four pathways is expected to be faster than average through 2018[1].

Careers in Network Systems involve network analysis, planning, and implementation, including design, installation, maintenance and management of network systems. Successful infrastructure is critical to almost every 21st century organization. People with expertise in Network Systems are in high demand for a variety of functions. Careers in Information Support and Services include managing the computer systems and software and providing technical support. Functions such as integrating multiple databases, connecting data and employees globally, and improving IT services are key components of this career pathway. The Programming and Software Development pathway encompasses careers that design, develop, implement and maintain computer software and its operation on various systems. Workers in the Web & Digital Communications pathway are involved in creating, designing and producing multi-media products and services used in business, training, entertainment, communications and marketing[3].

[1] U.S. Dept. of Labor, High Growth Industry Profile: Information Technology. www.doleta.gov. Accessed 3/31/10.
[2] Info Tech Employment, IT Employment Trends. www.infotechemployment.com. Accessed 3/31/10.
[3] States' Career Clusters, IT Cluster Brochure. www.careerclusters.org. Accessed 3/31/10.

The Youth Apprenticeship Program was approved by the Wisconsin State legislature in 1991 to provide a direct link between business, schools, and youth to meet the demands of technology, teamwork, communication, and leadership.

Wisconsin Youth Apprenticeship (YA) is a rigorous program that combines academic and related technical classroom instruction with mentored on the job learning for high school students. By training youth apprentices, employers play an active role in shaping the quality of their future workforce, improving the skill level of potential workers, and enhancing their competitive positioning in the marketplace. Employers, school districts, local consortiums, parents, and potential YA students are referred to the Youth Apprenticeship Program Operations Manual for general YA Program requirements.

Objective

The Wisconsin Information Technology (IT) YA Program is designed to provide students with a working understanding of occupational and technical skills in the four pathways within the IT industry. This program provides the framework for educators and industry to work together to produce work-ready, entry-level employees that will compete favorably in a global market, as well as, provide for post-secondary educational advancement while integrating work-based learning in the school and worksite.

The following features distinguish a YA Program from other similar youth school to work programs.

- Level Two Youth Apprenticeship is a two-year program for high school juniors and seniors with an interest in a particular field; i.e., computer programming. One-year Youth Apprenticeship Programs are also available to pursue.
- Youth apprentices, parents, employers, YA program coordinators, and school districts enter into a written agreement approved by the Department of Workforce Development.
- Statewide skills are established by the industry, making the youth apprentice skill set more relevant to the state's employers.
- Youth apprentices are trained at the worksite by skilled mentors and are paid minimum wage or better for their work. Students average 10-15 hours/week.
- Youth apprentices receive a high school diploma and a Certificate of Occupational Proficiency from the Wisconsin Department of Workforce Development (DWD) at graduation.
- Youth apprentices may receive advanced standing credit and/or transcripted credit for the YA Program at a Wisconsin Technical College and/or at some four year colleges. See **Appendix F** for current details.
- Statewide skill standards focus on skills and knowledge needed by employers for entry level employment in the IT industry.

Students apply and are interviewed by IT employers for positions in the IT YA Program. The state approved skill standards and program guide for the Information Technology (IT) YA Program are used in both the classroom instruction and worksite learning. If the local school district is unable to provide the related technical classroom instruction courses, they may contract with their local technical college or employer practitioners to do so.

The skill standards are competency based. Competencies are performance-based outcome statements of occupational related skills defined by representatives of IT worksites throughout Wisconsin and aligned with national skill standards. The competencies in the program are aligned with learning objectives in the CISCO IT Essentials program (http://www.cisco.com/web/learning/netacad/course_catalog/IT1.html), and the standards and knowledge statements outlined in the National States' Career Cluster Skill Standards (http://www.careerclusters.org/) for the four IT Career Cluster pathways: Network Systems, Information Support & Services, Web & Digital Communications, Programming & Software Development.

The competencies will be taught at the worksite in combination with supportive, related technical classroom instruction. While the skill competencies are established statewide, program implementation and oversight occurs through local consortium committees to assure local needs are met.

Target Population

This Youth Apprenticeship occupational area focuses on students developing skills in one or two of the four pathways in the IT industry: Network Systems, Information Support & Services, Web & Digital Communications and Programming & Software Development.

The **IT Essentials** unit covers basic skills pertinent to working with computer devices and application set up and support. The **Hardware** unit combines elements from the IT Network Systems pathway and the Information Support & Services pathway. This unit is appropriate for students who like problem solving while learning more deeply about communication systems between computers to meet business needs. The **Software** unit combines skills from the IT Programming & Software Development pathway and the Information Support & Services pathway. This unit provides opportunities to work with and manipulate the data that is managed by IT systems, as well as, work with professionals to evaluate and customize programming to meet business needs. The **Web & Digital Media** unit allows students who are interested in computers to combine their strong interests in design and creativity. Aligned with the Web & Digital Communications pathway, this unit allows students to work on web pages developing content, design, and scripts for business purposes. **ALL units** include an emphasis on working with an IT project team to accomplish required tasks.

All students successfully meeting current high school graduation requirements and with a good attendance record for that year are encouraged to apply for the Information Technology (IT) Youth Apprenticeship (YA) Program. The student must apply to the program in the year previous to program entry and be on track toward fulfilling high school graduation requirements in their school district. SEE **Appendix G** for students entering or continuing the IT YA Program in 2010.

All Youth Apprentices must complete the industry-wide foundational skill competencies consisting of competencies in core employability skills and safety & security. The Required Skill competencies may be completed concurrently with the specific technical skills.

Potential youth apprentices will be required to complete a minimum of 450 work hours with 180 hours (2 semesters) of related technical classroom instruction for a Level One (1-year) Information Technology (IT) YA Program or a minimum of 900 work hours with 360 hours (4 semesters) of related technical classroom instruction for a Level Two (2-year) IT YA program.

IT YA students are required to perform all of the Core and Safety & Security skills. **Level One (one year)** YA students also take additional competencies in a minimum of specific pathway unit. **Level Two (two year)** YA students are to choose another specific pathway unit based on their area of interest and their worksite placement.

IT Units

1. **General IT Pathway-**
    - IT Essentials Unit
2. **Network Systems and Information Support & Services Pathway**.
    - Hardware Unit
3. **Programming & Software Development and Information Support & Services Pathway**
    - Software Unit
4. **Web & Digital Communications Pathway**
    - Web & Digital Media Unit

Information Technology (IT) Program Responsibilities

The following responsibilities are outlined for individuals involved in the Information Technology (IT) YA Program.

Students –

1. Maintain academic skills and attendance at the high school to remain on track for high school graduation.
2. Participate in progress reviews as scheduled.
3. Exhibit maturity and responsibility to meet requirements of employment as designated by the employer.

Parents or Guardians-

4. Ensure that adequate transportation is available to and from the worksite.
5. Participate in student progress reviews as scheduled.

School District-

6. Recruit students and coordinate student enrollment in the program with the consortiums and/or employers.
7. Integrate the YA Program related technical classroom instruction and worksite training into the student's overall education program with high school graduation credit issued for each semester successfully completed.
8. Participate in student progress reviews as scheduled.

YA Program Coordinators-

9. Apply and maintain approval from the DWD to operate a YA Program.
10. Ensure a minimum of 450 hours of worksite instruction/experience plus a minimum of 180 hours of related technical classroom instruction for each one year YA program.
11. Establish and meet regularly with an advisory committee that will identify when and where tasks will be taught during the IT YA Program.
12. Develop and maintain a yearly commitment with participating high schools, technical colleges, and local businesses to accommodate the number of students involved in the IT YA Program.
13. Establish and maintain a YA student grievance procedure.
14. Provide employer mentor training.

Related Technical Classroom Instruction Faculty-

15. Qualify in the specialty areas being taught in the YA Program.

Employers and Worksite Mentors-

16. SEE **Appendix B –** Information Technology (IT) YA Implementation Guide for Employers.

17. Participate in a mentor training session and provide on the job training of the Youth Apprentices.

Department of Workforce Development-

18. Monitor national and state regulatory agencies, such as OSHA, for changes and impact on the IT Youth Apprenticeship Program.

Program Guide Organization

The competencies in the Information Technology (IT) YA program include many of those required for the CISCO IT Essentials program (http://www.cisco.com/web/learning/netacad/course_catalog/IT1.html), and the standards and knowledge outlined in the National States' Career Cluster Skill Standards (http://www.careerclusters.org/) for the Information Technology (IT) Career Cluster pathways.

The IT YA Program also requires that Related Technical Classroom Instruction is provided to support attainment of the knowledge necessary to master the competencies. While recommendations for specific Related Technical Classroom Instruction are detailed separately in **Appendix C**, instructional requirements will vary depending on local consortium and advisory group decisions. It is strongly advised that local consortiums work with their advisory groups to determine appropriate Related Technical Classroom Instruction based on their local needs and resources.

The Youth Apprenticeship Program curriculum is written and organized according to the Worldwide Instructional Design System (WIDS) format and includes the Information Technology (IT) YA Skill Standards Checklist and Course Outcome Summary (COS) for the program. Overall progress is documented on the Skill Standards Checklist which lists skill level achievement for each competency achieved. The COS outlines each skill competency with its corresponding performance standards and learning objectives. The Performance Standards describe the tasks and behaviors, as applicable, that employers should look for in order to evaluate the competency. The Learning Objectives outline the required content to be covered in the related technical classroom instruction. SEE **Appendix D** - Wisconsin Instructional Design System (WIDS) Format and Youth Apprenticeship Program Guide Terms and **Appendix E** - Use and Distribution of the Curriculum for further details.

Evaluation

The student must successfully complete the related technical classroom instruction and demonstrate the minimum skill level required on the Information Technology (IT) YA Skill Standards Checklist for each competency according to the applicable curriculum. Worksite mentors and/or instructors use this checklist to evaluate the learner on each of

the required skills. It is the responsibility of the mentor(s) to rate the students skill level on all tasks performed at the worksite.

Information Technology (IT) YA Program Completion

Upon successful completion of high school and the Level Two (2 year) IT YA Program requirements, the youth apprentice will receive a high school diploma and the applicable Certification of Occupational Proficiency from the Department of Workforce Development indicating "Information Technology (IT) Youth Apprenticeship." Youth Apprentices who successfully complete a Level One (1 year) IT YA Program and who are on track for graduation will be eligible for a Level One Certificate from the Department of Workforce Development. Furthermore, the YA students may;

1. Continue to work in the IT industry.
2. Apply to a registered apprenticeship.
3. Pursue a degree or diploma from a Wisconsin Technical College with advanced standing and/or transcripted credit.
4. Apply for admission to a four-year University of Wisconsin school with high school academic elective credit for admission.
5. Go into military service.

SEE **Appendix F** for current agreements for post-secondary credit at Wisconsin Technical Colleges and University of Wisconsin colleges.

Appendices

Appendix A - Work Contracts, Child Labor Laws, Liability & Insurance

Appendix B - Information Technology (IT) YA Implementation Guide for Employers

- Benefits to the Employer
- Role of the Employer
- Role of the Mentor
- Checklist for Program Participation
- Checklist for Program Operation
- Frequently Asked Questions
- Work Contracts, Child Labor Laws, Liability & Insurance (insert Appendix A)

Appendix C - Recommended Related Technical Classroom Instruction

Appendix D - Wisconsin Instructional Design System (WIDS) Format and Youth Apprenticeship Program Guide Terms

Appendix E - Use and Distribution of the Curriculum

Appendix F - Post Secondary Credits

Appendix G - Grandfather Clause – Program Transition Guidelines

Appendix H - Information Technology (IT) Skill Standards Checklist

Appendix I - Information Technology (IT) YA Course Outcome Summary: Overview and Table of Contents (COS)

Appendix J- Information Technology (IT) Required Skills Curriculum (Units 1-2)

Appendix K- IT Essentials Unit (Unit 3)

Appendix L- Hardware Unit (Unit 4)

Appendix M- Software Unit (Unit 5)

Appendix N- Web & Digital Media Unit (Unit 6)