Each Program Evaluates The Need

• Local and regional labor force needs are determined
  – Businesses identify labor shortages
  – Trade groups / associations seek help addressing shortages of skilled labor
  – Individuals seeking training
  – State and Federal labor force data indicate shortages of workers
  – New jobs are evolving with new technology
  – New businesses are established in region
• Are other training providers addressing the needs
Partnerships Are Formed With Local Relevant Businesses

• Define the industry need
  – What are the employment opportunities
  – What is the education level that is relevant
• Participate in curriculum development
• Identify other interested partners
• Provide resources
  – Expertise
  – Tools and equipment
  – $$
• Source of qualified instructors
Programs Should Meet Industry Standards

- Instruction should qualify individuals for certification
- Curriculum should prepares individuals for licensing
- Program recognition or certification of educational practices
Programming Decisions

- Associate of Applied Science Degrees (Credit)
  - Certificate options within the Degree curriculum
- Continuing Studies (Non-credit)
  - Certificate Programs
- Both credit and non-credit
Facilities

- Representative of industry standards
- Meet program certification requirements
- Appropriate tools and equipment that mimic industry applications
- Space constraints – real estate and money
Faculty

- Industry experience – 5-7 years minimum
- Credentials – hold license or certificate
- Industry training
- College degree
Program Delivery

- Long or Short Term Training
- Customized Contract Training for Industry
- On-line Distance Education (Blended instruction)
- Apprenticeship Related Instruction
- On-site Training
Dhanyavad!

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National Symposium of 21st Century Community Colleges
Strengthening Workforce Development in India for the Global Economy

Automotive Technology
Debra Anderson
March 14, 2011
Industry Needs

• The goal for Automotive business owners:
  - Provide good service
  - Do this at a fair price
  - While maximizing profits
  - Safeguard the future health of the business

• Industry challenges in which profits can be reduced or lost:
  - Automotive service and repair industry is cyclical
  - Technician quality
  - Shop reputation
Automotive Technology Program

• What we do:
  – The Program prepares individuals for entry into the automotive service and repair industry.

• Who we serve:
  – Students
  – Technicians
  – New automobile dealers
  – Used automobile dealers
  – Independent repair facilities
  – Franchise repair facilities
  – Government / non-government fleets
Automotive Technology Program

• Program Outcomes
  – ASE (Automotive Service Excellence)
  – Automobile repair technician certification
  – The technicians industry credentials

• Program Standards:
  – NATEF (National Automobile Technician Education Foundation)
  – Automotive program certification
  – Automotive training credentials

• Montgomery College is a Master NATEF Certified Program
  – NATEF requires 1080 hours of instruction
  – Montgomery College delivers 1140
Automotive Technology Program

- Automotive Business Models
  - New automobile dealers
  - Used automobile dealers
  - Independent repair facilities
  - Franchise repair facilities
  - Government /non-government fleets

- Other Training Models
  - Motor company training program
  - Parts manufacturer, distributor, OEM supplier
Program Description

• Our Approach
  – Generic training, self sufficient from other training models
  – Training that serves all automotive business models

• Faculty
  – ASE Master Certified technicians
  – Degree holding education experts
  – Develop and deliver curriculum which best serves all likely employers

• Automotive Major Options
  – Automotive associates degree option
  – Automotive specialty area certificate options
Program Description

• 14 Automotive Courses Designed to:
  – Develop basic and most employable skills initially
  – Award student success nearly every semester
  – Allow students to acquire ASE certifications as they move through the program
  – Improving student marketability and starting pay rate

• Types of students
  – Working technicians -- ASE transfer for college credit
  – High school students -- no previous automotive training
  – High school students – with 2 years automotive training
Curriculum

- Automotive Courses
  - Introduction to Automotive Technology: 3 credit hours
  - Brakes: 5 credit hours
  - Suspension and Steering: 5 credit hours
  - Automotive Electricity I: 4 credit hours
  - Battery/Staring/Charging: 3 credit hours
  - Chassis Circuits: 4 credit hours
  - Engine Repair: 4 credit hours
  - Basic Engine Performance: 4 credit hours
  - Engine Performance II: 4 credit hours
  - Engine Performance III: 4 credit hours
  - Automotive HVAC: 4 credit hours
  - Manual Drive Train and Axles: 4 credit hours
  - Automatic Transmissions/Transxales: 5 credit hours
  - Auto tech Practicum (work place based): 1 credit hour

Total: 55 credit hours
Curriculum

- General Education Courses
  - Variety required
  - Gen. Ed required - **Total 23 credit hours**

- Awards
  - A.A.S. Degree in Automotive Technology - **68 credit hours**
  - Four (4) MC Specialty Area Certificates - **14 - 25 credit hours**
Program Description

• **Automotive Courses**
  – Day
  – Night
  – One (1) day or night a week
  – 15 week blocks of time called semesters
  – Lectures -- present concepts and theory
  – Labs -- require that students perform on-vehicle and on-bench exercise

• **Lab Mimics Real World Shop Practices**
  – MC Program Fleet
  – 50% of training delivered in the lab

• **Student Assessment**
  – Written Examination
  – Practical Examination
  – ASE Certification
Facility

- Instructional Areas
  - Classrooms
  - Lab / Shop
  - Climate controlled
  - Presentation media
  - Classroom storage
  - Training Aids
  - 12 bays, Hoists
  - Staffed tool room
  - Hand tools, specialty equipment, lighting, safety equipment, ventilation
Facility

- Non Instructional Area
  - Storage for large components and assemblies
  - Audio visual resource room
  - Private faculty and staff offices
  - Meeting room
  - Presentation space
  - Corporate partners, customized space
  - Storage lot for MC fleet
  - Program maintains a fleet of 26-30 vehicles
Emerging/Changing Technologies

• Driven by Industry Change
  – Advisory board – industry professionals
  – Industry partners

• Process for change
  – Industry Experts Hired
  – New Course Offered - “special topics”
  – Feedback and Interest Evaluated
  – Adherence to Industry Confirmed
  – Course Added to Automotive Curriculum
Emerging/Changing Technologies

- Alternative Fuel Vehicle Technology Training
  - Grant Awarded
  - Five (5) vehicles added to fleet
  - College supported component/training aid purchase

- The Technologies:
  - Hybrid Electric Vehicles (HEV’s)
  - Electric Vehicles (EV’s)
  - Compressed Natural Gas (CNG)
  - Lt. duty diesel (clean diesel)

- HEV’s and EV’s Course offered:
  - Fall (September) 2011

- Other Alt. Fuel Technologies 2012
Dhanyavad!

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Spotlight on Building and Construction Technology Program

John Phillips  March 14, 2011
Building and Construction - Industry Needs

• The construction industry requires individuals with strong technical aptitude and skills
• Our instructors have many years of experience in their respective trade areas
• A well trained workforce is critical to construction growth and progress, especially as technology changes
• Construction advisory committee assures relevance of curriculum
• Professional seminars strengthen ties to industry
Building and Construction - Program Description

• Day, evening, and Saturday classes
• Carpentry, Electrical Wiring, or Heating, Ventilation, and Air Conditioning are primary tracks
• Letter of Recognition (8 credit-hours), Certificate (20-23 credit-hours) or Associate of Applied Science Degree (60 credit-hours)
• Non-credit course options
• Formal Apprenticeship options
• Approximately 80 courses are offered
Building and Construction - Course Examples

- Fundamentals of Carpentry; Fundamentals of Electrical Wiring; Fundamentals of Plumbing; Fundamentals of Refrigeration
- Air Conditioning and Heat Pumps; Heating Systems
- National Electrical Code; Building Codes and Standards
- Apartment Maintenance Technician Certification
- Remodeling and Interior Finishing
- Environmental Protection Agency Certification for CFC Recovery
- Licensing Prep
Building and Construction Technology - Facilities

- Located in the Gudelsky Institute for Technical Education
- Multiple classrooms for lecture, lab, or a combination of activities
- Lecture class sizes range from 12 up to 80 students
- Lab classes have a maximum of 15-18 students
- Latest technology, tools, and materials are utilized for real-world activities
Emerging Technologies

Solar Photovoltaic Design and Installation
Emerging Technologies

Solar Thermal Heating and Hot Water
Emerging Technologies

Wind Technology
Dhanyavad!

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Spotlight on Applied Technologies:
The Management of Construction Program

Mario Parcan
March 14, 2011
Management of Construction: Industry Needs

• Maryland needs employees with appropriate technical skills
• Montgomery County employers are constantly offering employment to our students and graduates
• Our professors act as liaison members to industry
• Our industry is represented in our Industry Advisory Committee
• Our Alumni group assists with networking opportunities and job placement of our graduates
Management of Construction: Program Description

• Day and evening classes leading to a Certificate (33 credit-hours) or Associate of Applied Sciences Degree (60 credit-hours)
• During the current Spring 2011 Semester: 10 courses daytime and 10 courses in the evening

• Our Curriculum:
  • Fundamental courses = 100 Level
  • Advanced courses = 200 level
  • General Education courses
Management of Construction: Our Facilities

- The Management of Construction program located in the Technical Center
- Two dedicated classrooms (Labs) and multiple classrooms
- Construction Management Lab
- Construction Computer Lab
Management of Construction: Our Facilities

Computer Applications in Construction
Management of Construction: Emerging Technologies

Construction Estimating
Management of Construction: Emerging Technologies

Construction Planning and Scheduling
Dhanyavad!

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