

**Industrial Technology and General Technology Annual Advisory Committee and AMT
Maintenance/Engineering Sub-Committee Meeting**

March 31, 2014

7:00 a.m. – 8:30 a.m.

Meeting called to order and welcome by Reginald Davis, JSCC Industrial Technology Advisory Committee Chairman with the following members present: Gerald Batchelor, Jason Bates, Dr. Bruce Blanding (President of JSCC), Jere Cox, Reginald Davis, Roger James, Andy Kirby, Jack Laser, Terri Messer, Allen Powell, Dan Rodenbaugh, Joel Rushing, Bobby Smith (VP for Academic Affairs, JSCC), Lynda Trick, David Weathers, Jack Williams, Chris Zamora, Mandy White, Caleb Foster, Brian Burnett, Craig Little, Rick Matheny, Debra Eanes, Richard Skelton, Cathi Roberts and Janice Taylor.

The Committee Chairman emphasized that it will take a lot of work from each attendee here and each will be requested to provide input from each of their respective employers in order to make the program work.

Welcome and introductions from Terri Messer, Dean of Business and Industry at JSCC with special introductions of Mandy White (thank you for your investment and time in this program). Mandy White stated that this program is a great tool to use in our box in the future; Bobby Smith, VP of Academic Affairs and Dr. Bruce Blanding, President of JSCC. Dr. Blanding thanked the members for being in attendance and reminded them this is your meeting and not our meeting and your input will be noted and we will respond.

Old Committee Business:

All JSCC Industrial Tech and MSMT students will take the same set of required courses leading to an Associates of Applied Science degree.

With the equipment grant, we will be upgrading the lab.

There will be a morning and afternoon cohort of students.

The students accepted into the AMT Program will be working alongside the maintenance professionals in your firms.

The JSCC AMT Consortium now has 16 companies. Pictsweet joined this past Friday. This is a testament to the program.

Jason Bates attended a meeting in Nashville recently informing the members that there is a lot of interest in the AMT Program. They are excited about the concept of companies coming together in the communities to combat the job problem. There is a possibility of additional funding through the Governor's office for these types of programs (approximately \$10 Million is available). The State is interested in how the AMT Program can be replicated in other parts of the state and how communities can work together.

McWherter lab equipment update:

- Still waiting for some purchase orders to be released.
- Discussion of the new equipment with photographs.

It was noted that the AMTEC Simulator has numerous safety devices built into the machine.

High school recruiting campaign highlights:

- Between October 15, 2013 and February 28, 2014:
- Have reached 1,054 people
- Have recruited in 24 high schools
- Nine consortium firms actively participated in the recruitment presentations along with JSCC faculty/staff
- Have spoken at 8 local civic, chamber events

AMT application update and addendum:

- Application deadline is April 1, 2014
- Received 13 applications – schools that were contacted say there are more coming
- School systems are not communicating within the schools
- 19 minimum score on ACT
- Presentation in 24 high schools, 8 professional organizations, Cable TV and radio show
- JSCC hosted the regional CTE Directors meeting
- Alternative method of testing offered
- Held a Technology Youth Summit for the 14 county service area's public high schools for future applicants with 16 schools, 110 participants (60% in Manufacturing/Engineering pathway)
- Requested application deadline be extended to April 15
- Raised community and educational awareness of manufacturing needs, technology, and career opportunities
- Increased media coverage
- Improved lines of communications indicated by the greater number of phone calls and emails
- Accept JSCC equivalency test scores for consideration in acceptance into the AMT cohort
- Accept additional students, not participating in the work experience as alternates

Program Updates:

See PowerPoint

Graduate Trend:

See PowerPoint

Exit Exam Results:
See PowerPoint

The exit exam is a very comprehensive exam. Our students have continued to improve which is a true testament to Richard Skelton and Roger James to make sure students are getting what they need.

The students will attend classes on Tuesdays and Thursdays. The other three days, they will work at your facilities.

They will be required to take thirteen technical classes:
First Year: EET 130, IT 150, EET 150, EET 180, MET 110
Second Year: EET 170, EET 230, EET 297, EET 240, EET 260, EET 270

Seven general education classes: English Comp, Speech, Math, Non-Calculus Physics, Humanities, Microeconomics and Computer Applications

Beginning in the fall of 2014, students will take four classes at a time. We are trying to mold your future workers.

Discussion of the course specific curriculum validation sheets for industrial technology:

IT 150 – Industrial Circuits

Richard Skelton and Roger James will be going to Nashville for OSHA courses and become certified instructors.

Labs will also be incorporated into the classes.

Richard and Roger will be visiting your facilities and get feedback in the development of the labs and make meaningful for our students. We will distribute our business cards and set up times to visit your facilities.

Safety will be incorporated in every class that we are doing.

The following questions/concerns were noted:

- More emphasis on safety
- Will students receive certificates? **Our goal is for our students to be able to get 10 hour OSHA certification**
- Items d and e are the same learning objective

EET 130 – AC/DC Circuits – this is a combination of the DC/AC circuit courses

Brief discussion followed

The following questions/concerns were noted:

- Add more DC.
- Reggie Davis – look at the difference between AC and DC as well as positive ground and negative ground.
- Jere Cox asked if there was a growing market in medium voltage as large companies are using more equipment using it.
- Lynda Trick expressed a concern about giving the wrong idea about meters.
- Richard stated that individuals have to be licensed to work with meters.
- Will students have their own tools?
- Jason Bates added when they come in as a co-op; don't expect them to know anything. When they graduate, they will be top-notch employees. Assume that they don't know anything.
- Tools being used in class should be the same as those in plants.
- Chris Zamora expressed in industry the fluke meter will be 3 or higher. Also, safety should be a mindset and a way of work. Show safety videos with consequences. Safety starts with us.

EET 180 – Programmable Logic Controls I

The placing of the course is changing. The course will be offered in the spring. Students will need a good background in EET 130 (AC/DC Circuits).

Jason Bates added that we are comfortable with what they are getting.

No additional open discussion.

MET 110 – Introduction to Drafting & AutoCAD Applications

Item D will need the most attention.

Students will receive an acknowledgement that they completed all the courses.

Reading schematics is covered in just about every class that we have.

Richard requested examples of actual schematics that you are willing to share that will be helpful in training.

Due to time constraints, Roger requested people “side bar” rather than open discussion.

EET 150 – Electromechanical Devices

The course is still under construction. You will receive information about course through email.

Questions:

- Are there certain schools that seem to be more interested?
- Are there community groups that we can reach out to....to encourage students maybe go to private schools?
- How are we going to work together as a group to draw more students?
- How do we get to the parents?
- How do we start changing?

Mandy White discussed briefly the Dream It. Do It.TN campaign and encouraged members to have their companies participant.

One of the advisory committee members is retiring: Jack Williams.

Plaque was presented to Jack thanking him for his service to the Industrial Technology/General Technology Advisory Committee

Reggie Davis thanked everyone for their comments and feedback.

Meeting adjourned.

Post meeting update:

Dean Messer forwarded to the IT Gen Tech AMT Committee Members that were unable to attend meeting information and requested their input on the curriculum design. To date, we have also received information from Volvo Penta, Toyota Bodine and Delta Faucet.



Jackson State Community College

March 31, 2014
7:00- 8:30 a.m.
McWherter Lab 131

**Industrial Technology & General Technology Annual Advisory Committee
and AMT Maintenance/Engineering Sub-Committee Meeting**

Breakfast Meeting Agenda

1. **Welcome and Introductions** - Reggie Davis, JSCC Industrial Technology Advisory Committee Chairman
2. **Old Committee Business**
 - a. AMT overview – Terri Messer
 - b. McWherter lab equipment update – Jack Laser
 - c. High school recruiting campaign highlights – Cathi Roberts
 - d. AMT application update and addendum – Cathi Roberts
3. **New Business**
 - a. Program Updates -Terri Messer
 - i. Enrollment
 - ii. Graduation
 - iii. Exit Exam Results
 - b. Curriculum Review – Richard Skelton and Roger James
 - i. Industrial Tech MSMT cohort course rotation
 - ii. Electrical topics validation
 - iii. Mechanical, pneumatics/hydraulics, motors topics needed
 - iv. Specific course analysis of EET 130, IT 150 and possibly EET 180 and MET 110
 - v. Need for JSCC to visit industry maintenance teams
 - c. Incumbent Worker Training Opportunities – Jack Laser
4. **Feedback** – Reggie Davis



Industrial Technology/General Technology Annual Advisory Committee and AMT Maintenance/Engineering Sub-Committee Meeting

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Jackson State McWherter Lab



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 - High school recruiting campaign highlights – Cathi Roberts
 - AMT application update and addendum – Cathi Roberts
- **New Business**
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 - Enrollment
 - Graduation
 - Exit Exam Results
 - Curriculum Review – Richard Skelton and Roger James
 - Industrial Tech MSMT cohort course rotation
 - Electrical topics validation
 - Mechanical, pneumatics/hydraulics, motors topics needed
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 - Need for JSCC to visit industry maintenance teams
 - Incumbent Worker Training Opportunities – Jack Laser
- **Feedback** – Reggie Davis

Industrial Technology- Multi Skilled Maintenance Technician – Advanced Maintenance Technician Co-op

- All JSCC industrial tech, MSMT students will take the same set of required courses leading to an associates of applied science degree.
- Courses consist of theory and hands-on lab activities using new equipment upgrades
- There will be a morning and afternoon cohort of students taking four college level classes each term.
- The students accepted into the AMT Cohort group will be allowed to work along the maintenance professionals at one of the fifteen company consortium firms.



The Solution

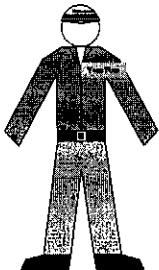
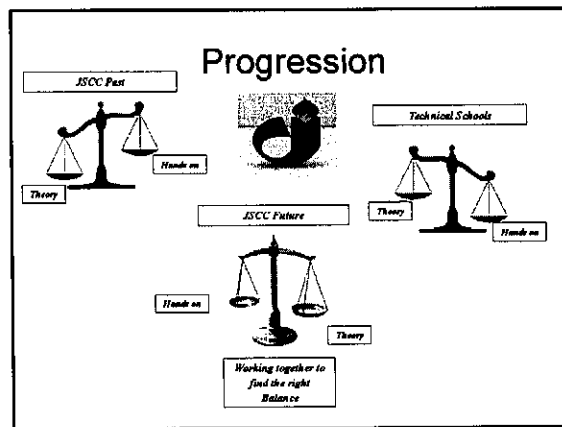
Vision the final product

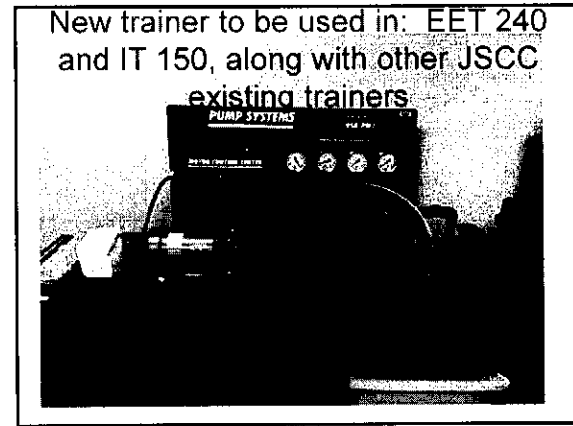
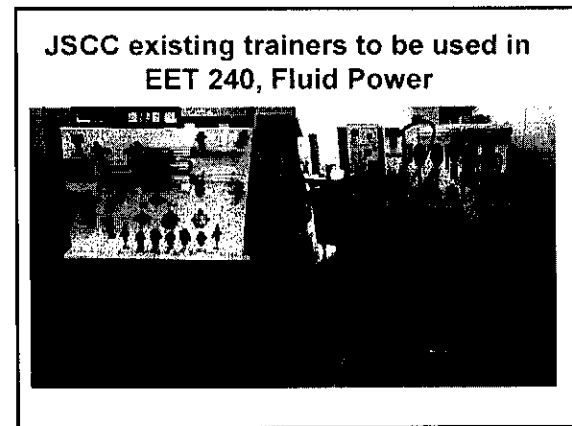
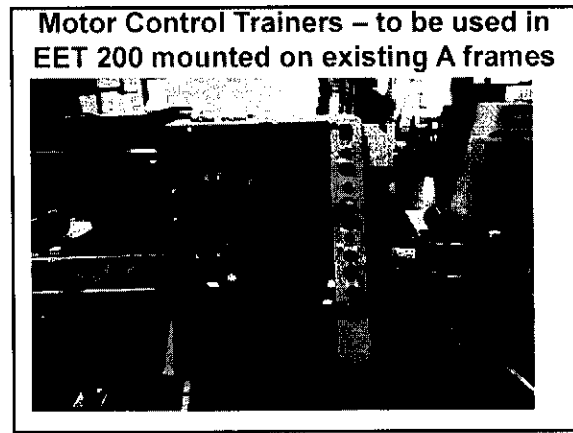
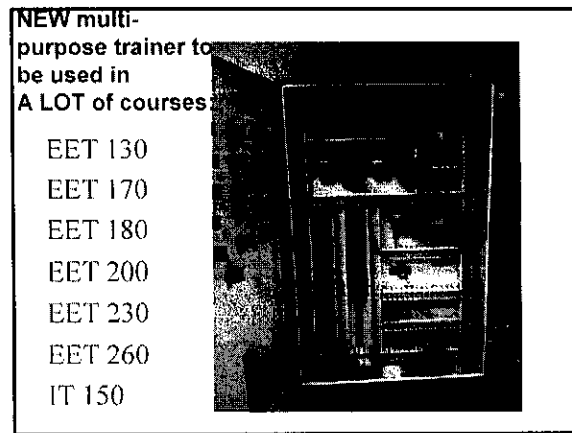
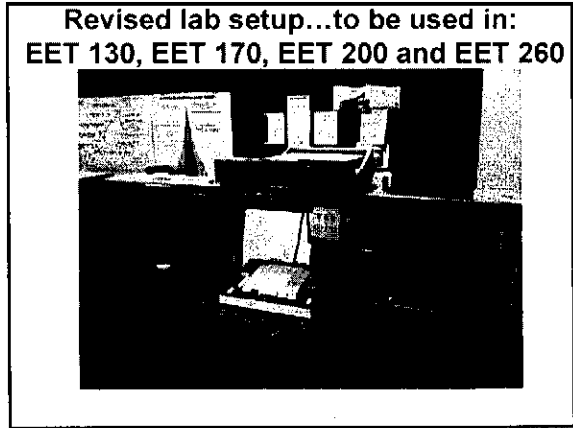
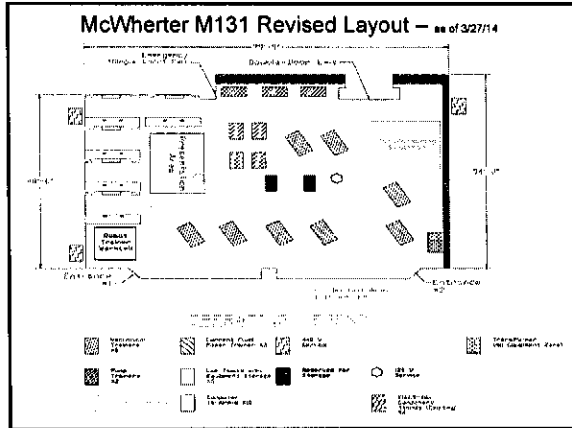
NEXT GENERATION Skilled Team Member

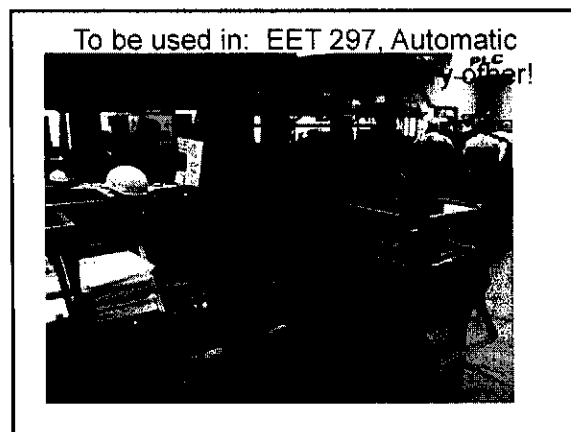
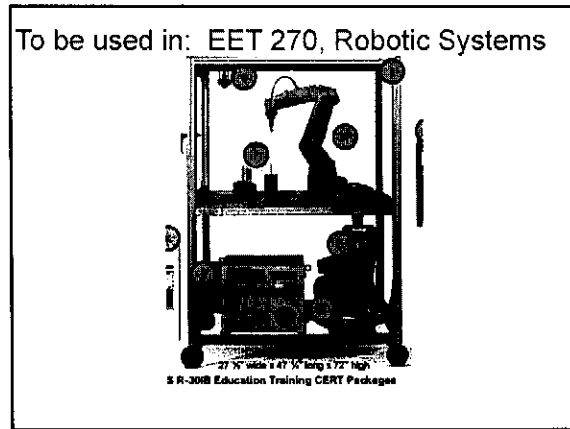
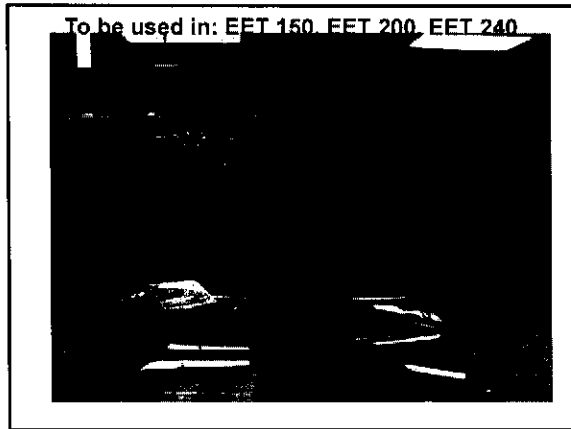
- Totally Multitasked
- Electrical / Field Power / Mechanics / Fabricator
- Strong Math Capability
- Upper 1/3 National
- Strong Reading Capability
- Minimum 12th Grade Equivalent
- Fast Technical Learner
- Can learn, apply, improve, learn again quickly
- Users of Learning with Digital Media
- Digital media is the preferred method
- Strong Problem Solver
- Can fully explain problem solving and methods
- Effective Verbal & Written Communicator
- Group & 1-on-1, Develops high quality written material
- Effective Interpersonal Skills
- A conflict resolver
- Natural Teamworker
- Prefers working as part of a team
- Qualified for the Next Level

TARGET: 100% of Maintenance Force

136 Associates Degree / All required company training complete





High School Recruiting Campaign Highlights

Between October 15 and February 28:

- Have reached 1,054 people
- Have recruited in 24 local high schools
 - 9 consortium firms actively participated in the recruitment presentations along with JSCC faculty/staff
- Have spoken at 8 local civic, chamber events
- Have continued to seek additional industry consortium members... *Pictsweet* in Bells joined the group just last week!

AMT Application Update

Applications Received: 8 Applications Expected: 13

Road Blocks:

- ❖ Disconnect between JSCC and Career and Technical Ed Dept. in individual school systems
- ❖ Inadequate communication with in school systems
- ❖ School closings – over 8 days for inclement weather, 19 holidays, 8 break days
- ❖ Working with ACT Test dates and scores
- ❖ Lack of knowledge and understanding about manufacturing

Paving The Way:

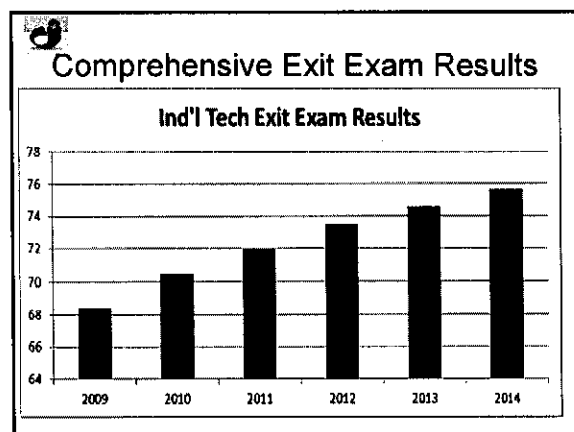
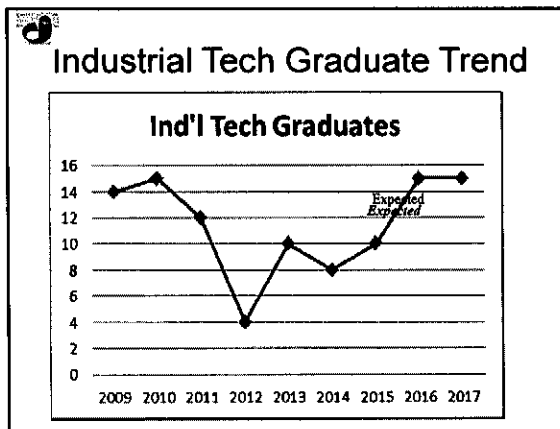
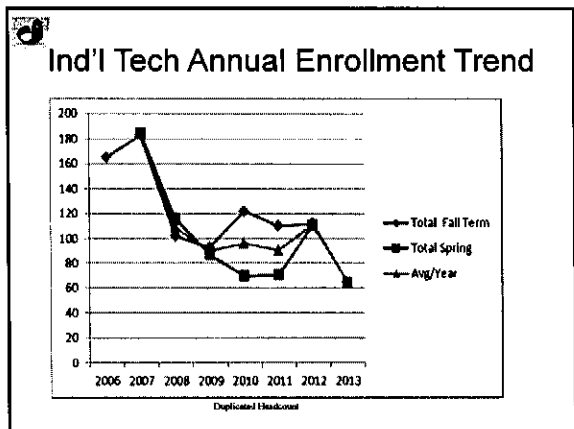
- ❖ Hosted the regional CTE Directors meeting
- ❖ Attempted verbal follow-up with all CTE Directors.
- ❖ Offered alternative method of testing.
- ❖ Delivered AMT presentations in 24 high schools, 8 professional organizations, Cable TV, and radio show.
- ❖ Held a Technology Youth Summit for the 14 county service area's public high schools to set stage for future applicants.

Progress:

- ❖ Raised community and educational awareness of manufacturing needs, technology, and career opportunities
- ❖ increased media coverage
- ❖ Improved lines of communications indicated by the greater number of phone calls and emails
- ❖ Greatly supported Technology Youth Summit: 16 schools, 110 participants (60% in Manufacturing/Engineering track)

Suggestions:

- ❖ Extend application deadline until April 15, 2014
- ❖ Accept JSCC equivalency test scores for consideration in acceptance into the AMT cohort
- ❖ Accept additional students, not participating in the work, experience as alternates
- ❖ Offer an afternoon cohort for interested students not meeting the program criteria



JSCC Industrial Technology – Associates of Applied Science, MSMT Curriculum

13 Technical Classes:

- EET 130- 1st yr
- IT 150 – 1st yr
- EET 150 – 1st yr
- EET 170 – 2nd yr
- EET 180- 1st yr
- EET 230 – 2nd yr
- EET 297 – 2nd yr
- EET 200 - Mid
- EET 240 – 2nd yr
- EET 260 – 2nd yr
- EET 270 – 2nd yr
- MET 110 – 1st yr
- MET 155 - Mid

7 General Education Classes:

- English Comp
- Speech
- Math Statistics
- Non-Calculus Physics
- Humanities
- Microeconomics
- Computer App.

Hands On *Theory*

JSCC Future

Working together to find the right Balance

JSCC Industrial Technology MSMT Solution: Vision the final product

NEXT GENERATION Skilled Team Member


- Totally Multi-skilled**
- Electrical / Fluid Power / Mechanics / Fabricator
- Strong Math Capability**
- Upper 1/3 Nationality
- Strong Reading Capability**
- Minimum 12th Grade Equivalent
- Fast Technical Learner**
- Can learn, apply, improve, learn again quickly
- Uses & Learns with Digital Media
- Digital media is the preferred method
- Strong Problem Solver**
- Can fully explain problem solving and methods
- Effective Verbal & Written Communicator**
- Group & 1-on-1, develops high quality written material
- Effective Interpersonal Skills**
- A conflict resolver
- Natural Teamworker**
- Prides working as part of a team
- Qualified for the Next Level**

TARGET: 100% of Maintenance Force

Has Associate Degree / All required company training complete

JSCC IT Curriculum = Your Future Maintenance Team Member

- **Totally Multi-skilled**
Electrical / Fluid Power / Mechanics / Fabricator
- EET 130 EET 240 EET 150 MET 155
- IT 150
- EET 170
- EET 180
- EET 230
- **Strong Math Capability – 19 ACT, or equivalent, required to take first class, EET 130**



Ind'l Tech – MSMT Course Rotation

- Reference program information.
- Five, 16 week terms

Fall 2014 Cohort (Aug – Dec 2014)			
TR	First Year	Fall Semester	Credits
8:00-9:15	CIS 101	Software Applications	3
9:30-10:45	EET 130	AC/DC Circuits	3
11:00-12:15	IT 150	Industrial Circuits	3
12:30-1:45	ENGL 1010	English Comp I	3
		Total Credits	12

Ind'l Tech – MSMT Course Rotation

Spring 2015 Cohort (Jan – May 2015)			
TR	First Year	Spring Semester	Credits
8:00-9:15	EET 180	Programmable Logic Controllers I	3
12:30-1:45	MATH 1530	Statistics and Probability	3
11:00-12:15	EET 150	Electromechanical Devices	3
9:30-10:45	MET 110	Intro to Drafting & Auto CAD Applications	3
		Total Credits	12

IT 150 – Industrial Circuits

- **Course Description:** This course will provide an overview of various industrial systems and sub-systems and how they are used in industrial applications today. Topics include dc and ac theory, transformers, motors, PLC's, hydraulics, pneumatics, with emphasis on workplace safety and OSHA regulations.

IT 150 Learning Objectives	
1.	A study of safety in the workplace will be covered as it relates to industry with special focus on how accidents happen and how that affects productivity and competitiveness.
2.	OSHA regulations will be studied in detail as it relates to stress hazards, falling and lifting hazards, electrical and fire hazards. We will cover how supervisors and employees can prompt a safe work environment following the rules of safety.
3.	Students will be taught how to apply and use the safe practices of lockout and tag out procedures.
4.	To develop a general understanding of the different types of systems that are used in industry today and how these systems interact with one another.
5.	A study of different systems like electrical, hydraulic, pneumatic, motors, mechanical, PLC's, and other similar systems and sub-systems.
6.	A development of good troubleshooting skills as related to each system and sub-system.
7.	To provide a general understanding of schematic symbols and reading schematic diagrams.

EET 130 – AC/DC Circuits

- **Course Description:** This course covers the principles of DC/AC circuit analysis. Core concepts covered include voltage and current sources, series and parallel circuits Ohm's law, Kirchhoff's voltage and current laws, single and three phase AC circuits are analyzed, capacitors and inductors. Time constants, resonance, transient analysis and simple filters are also covered.

EET 130 Learning Objectives	
1.	a. To impart an understanding of basic electrical theory.
2.	b. To provide practical examples of common electrical tasks found in industry.
3.	c. To provide a background for further study of related courses.
4.	d. To discuss and provide hands-on experience in DC/AC circuit analysis.
5.	e. Identify an AC signal and the components used in an AC circuit.
6.	f. Describe the component level reaction to AC.
7.	g. Apply component knowledge to construct an AC circuit.
8.	h. Troubleshoot unexpected component reaction in an AC circuit.
9.	i. Evaluate circuit components for expected results.

EET 180 – PLC 1

- **Course Description:** This course is an introduction of PLC's (Programmable Logic Controllers) and their usage in modern industrial applications. Memory addressing schemes and ladder logic are discussed in detail. Proper PLC installations and maintenance are also covered.

EET 180 Learning Objectives	
1.	To impart an understanding and overview of PLC's (Programmable Logic Controllers).
2.	To familiarize the student with various PLC hardware components and system arrangements.
3.	To familiarize the student with PLC number systems and fundamentals of control logic.
4.	To provide an understanding of basic PLC programming techniques using the instruction set.
5.	Develop fundamental PLC wiring diagrams and ladder logic programs using industrial standards.
6.	To understand the proper use of timers and counters in various PLC applications.
7.	To provide the student with various programming examples and develop programming and troubleshooting skills during lab exercises where students interact with operating PLC's.

MET 110 – Intro Drafting/Auto CAD

- This course provides knowledge and practice in the methods and standards employed to develop technical drawings and interpret blueprints for various electro-mechanical projects. Topics include drawing interpretation, drafting practices, line convention, dimensioning and tolerancing of technical drawings per ANSI Y14.5M-1994, orthographic projections, 2-D multiview drawings, and an introduction to basic Geometric Dimensioning and Tolerancing. This instruction will be based on the use of Auto CAD to perform these tasks.

MET 110 Learning Objective	
1.	To provide the student with an understanding of the universal graphic language, the means by which the designer, technician, and engineer develop and record ideas for transmission to those who will transform them into reality.
2.	To provide the skills necessary for the development and execution of drawings through the use of computer aided design software, AutoCAD.
3.	To familiarize the student with American National Standards Institute (ANSI) standards for drawing, dimensioning, and tolerancing.
4.	Familiarize students with aspects of blueprint reading.

EET 150 – Electromechanical Devices

• EET 150 COURSE DESCRIPTION:
STILL UNDER CONSTRUCTION!

Students will study basic principles of mechanical systems, component operation, system design, component installation and adjustment, troubleshooting, maintenance, and applications.

Components include:

fractional horsepower and heavy duty style components,

3 types of bushings,

7 types of couplings,

single and multiple belt and chain drives,

silent chains,

synchronous and HTD belt drives,

spur gear drives, manual lubrication,

plain and roller bearings,

seals, and

gearboxes.

Students will learn how to perform shaft alignment using various techniques.



Questions?



Industrial Tech - MSMT Program - Sample Schedule - Fall 2014 Tues/Thurs Cohort Plan

Fall 2014 Morning Cohort			
TR	First Year	Fall Semester	Credits
8:00-9:15	CIS 101 or INFS 1010	Software Applications or Computer Applications	3
9:30-10:45	EET 130 IT 150	AC/DC Circuits Industrial Circuits	3
11:00-12:15	ENGL 1010	English Comp I	3
12:30-1:45		Total Credits	12

Fall 2014 Afternoon Cohort			
TR	First Year	Fall Semester	Credits
3:30-4:45	CIS 101 or INFS 1010	Software Applications or Computer Applications	3
5:00 - 6:15	EET 130 IT 150	AC/DC Circuits Industrial Circuits	3
2:00-3:15	ENGL 1010	English Comp I	3
12:30-1:45		Total Credits	12

Spring 2015 Morning Cohort			
TR	First Year	Spring Semester	Credits
8:00-9:15	EET 180	Programmable Logic Controllers I	3
12:30-1:45	MATH 1530 EET 150	Statistics and Probability Electromechanical Devices	3
11:00-12:15	MET 110	Intro to Drafting & Auto CAD Applications	3
9:30-10:45		Total Credits	12

Spring 2015 Afternoon Cohort			
TR	First Year	Spring Semester	Credits
2:00-3:15	EET 180	Programmable Logic Controllers I	3
12:30-1:45	MATH 1530 EET 150	Statistics and Probability Electromechanical Devices	3
3:30-4:45	MET 110	Intro to Drafting & Auto CAD Applications	3
5:00-6:15		Total Credits	12

Summer 2015			
TR	First Year	Summer Semester	Credits
TBA	PHYS 2010	Non-Calculus Based Physics	4
Online	ECON 2010	Computer Applications	3
TBA	MET 155	MicroEconomics (Online) Technical Elective - Welding for Maintenance	3
TBA	EET 200	Motors and Motor Controls	3
		Total Credits	13

Fall 2014	12
Spring 2015	12
Summer 2015	13
Fall 2015	12
Spring 2016	12
Total Credits	61

Fall 2015 Morning Cohort			
TR	Second Year	Fall Semester	Credits
8:00-9:15	EET 230	Programmable Logic Controllers II	3
11:00-12:15	EET 260	Instrumentation	3
12:30-1:45	HUM	Humanities	3
9:30-10:45	EET 170	Electronics I	3
		Total Credits	12

Fall 2015 Afternoon Cohort			
TR	Second Year	Fall Semester	Credits
2:00-3:15	EET 230	Programmable Logic Controllers II	3
5:00-6:15	EET 260	Instrumentation	3
12:30-1:45	HUM	Humanities	3
3:30-4:45	EET 170	Electronics I	3
		Total Credits	12

Spring 2016 Morning Cohort			
TR	Second Year	Spring Semester	Credits
8:00-9:15	EET 240	Fluid Power	3
9:30-10:45	EET 270	Robotics	3
11:00-12:15	EET 297	Automatic Processes Fundamentals of Speech	3
12:30-1:45	SPCH 1010		3
		Total Credits	12

Spring 2016 Afternoon Cohort			
TR	Second Year	Spring Semester	Credits
3:30-4:45	EET 240	Introduction to Fluid Power	3
5:00-6:15	EET 270	Robotics	3
2:00-3:15	EET 297	Automatic Processes Fundamentals of Speech	3
12:30-1:45	SPCH 1010		3
		Total Credits	12



Jackson State Community College

Industrial Technology Curriculum Validation

Please review the following industrial technology technical course learning objectives and validate by putting an X in the box if you agree that topic and/or course learning objective is vital to the overall knowledge of a multi skilled maintenance technician.

EET 130 – AC/DC Circuits (First Semester Course)

This course covers the principles of DC/AC circuit analysis. Core concepts covered include voltage and current sources, series and parallel circuits, Ohm's law, Kirchhoff's voltage and current laws, single and three phase AC circuits, capacitors and inductors and time constraints, resonance, transient analysis and simple filters.

<input checked="" type="checkbox"/>	EET 130 Learning Objectives
<input type="checkbox"/>	a. To impart an understanding of basic electrical theory.
<input type="checkbox"/>	b. To provide practical examples of common electrical task found in industry.
<input type="checkbox"/>	c. To provide a background for further study of related courses.
<input type="checkbox"/>	d. To discuss and provide hands-on experience in DC/AC circuit analysis.
<input type="checkbox"/>	e. Identify an AC signal and the components used in an AC circuit.
<input type="checkbox"/>	f. Describe the component level reaction to AC.
<input type="checkbox"/>	g. Apply component knowledge to construct an AC circuit.
<input type="checkbox"/>	h. Troubleshoot unexpected component reaction in an AC circuit.
<input type="checkbox"/>	i. Evaluate circuit components for expected results.

Please list any further topics you feel would enhance the AC/DC Circuits class:

Name: _____ Company: _____

Date: _____



Jackson State Community College

Industrial Technology Curriculum Validation

Please review the following industrial technology technical course learning objectives and validate by putting an X in the box, if you concur that topic and/or course learning objective is vital to the overall knowledge of a multi skilled maintenance technician.

EET 180 – Programmable Logic Controls I (Second Semester Course)

This course is an introduction of PLC's (Programmable Logic Controllers) and their usage in modern industrial applications. Memory addressing schemes and ladder logic are discussed in detail. Proper PLC installations and maintenance are also covered.

<input checked="" type="checkbox"/>	EET 180 Learning Objectives
<input type="checkbox"/>	a. To impart an understanding and overview of PLC's (Programmable Logic Controllers).
<input type="checkbox"/>	b. To familiarize the student with various PLC hardware components and system arrangements.
<input type="checkbox"/>	c. To familiarize the student with PLC number systems and fundamentals of control logic.
<input type="checkbox"/>	d. To provide an understanding of basic PLC programming techniques using the instruction set.
<input type="checkbox"/>	e. Develop fundamental PLC wiring diagrams and ladder logic programs using industrial standards.
<input type="checkbox"/>	f. To understand the proper use of timers and counters in various PLC applications.
<input type="checkbox"/>	g. To provide the student with various programming examples and develop programming and troubleshooting skills during lab exercises where students interact with operating PLC's.

Please list any further topics you feel would enhance the PLC 1 class:

Name: _____ Company: _____

Date: _____



Jackson State Community College

Industrial Technology Curriculum Validation

Please review the following industrial technology technical course learning objectives and validate by putting an X in the box if you agree that topic and/or course learning objective is vital to the overall knowledge of a multi skilled maintenance or applied manufacturing technician.

IT 150 – Industrial Circuits (First Semester Course)

This course will provide an overview of various industrial systems and applications used today. Topics include dc and ac theory, transformers, motors, PLCs, hydraulics, pneumatics, with emphasis on workplace safety and OSHA regulations.

<input checked="" type="checkbox"/>	IT 150 Learning Objectives
<input type="checkbox"/>	a. A study of safety in the workplace will be covered as it relates to industry with special focus on how accidents happen and how that affects productivity and competitiveness.
<input type="checkbox"/>	b. OSHA regulations will be studied in detail as it relates to stress hazards, falling and lifting hazards, electrical and fire hazards. We will cover how companies and employees can prompt a safe work environment following the rules of safety.
<input type="checkbox"/>	c. Students will be taught how to apply and use the safe practices of lockout and tag out procedures.
<input type="checkbox"/>	d. To develop a general understanding of the different types of systems that are used in industry today and how these systems interact with one another.
<input type="checkbox"/>	e. A study of different systems like electrical, hydraulic, pneumatics, motors, mechanical, PLC's, and other similar systems and sub-systems.
<input type="checkbox"/>	f. A development of good troubleshooting skills as related to each system and sub-system.
<input type="checkbox"/>	g. To provide a general understanding of schematic symbols and reading schematic diagrams.

Please list any further topics you feel would enhance the Industrial Circuits class:

Name: _____ Company: _____

Date: _____



Jackson State Community College

Industrial Technology Curriculum Validation

Please review the following industrial technology technical course learning objectives and validate by putting an X in the box, if you agree that topic and/or course learning objective is vital to the overall knowledge of a multi skilled maintenance and applied manufacturing technician.

MET 110 – Introduction to Drafting & AutoCAD Applications (Second Semester Course)

This course provides knowledge and practice in the methods and standards employed to develop technical drawings and interpret blueprints for various electro-mechanical projects. Topics include drawing interpretation, drafting practices, line convention, dimensioning and tolerancing of technical drawings per ANSI Y14.5M-1994, orthographic projections, 2-D multiview drawings, and an introduction to basic Geometric Dimensioning and Tolerancing. This instruction will be based on the use of Auto CAD to perform these tasks.

<input checked="" type="checkbox"/>	MET 110 Learning Objectives
	a. To provide the student with an understanding of the universal graphic language, the means by which the designer, technician, and engineer develop and record ideas for transmission to those who will transform them into reality.
	b. To provide the skills necessary for the development and execution of drawings through the use of computer aided design software, AutoCAD.
	c. To familiarize the student with American National Standards Institute (ANSI) standards for drawing, dimensioning, and tolerancing.
	d. Familiarize students with aspects of blueprint reading.

Please list any further topics you feel would enhance the MET 110 class:

Name: _____ Company: _____

Date: _____