Jackson State Community College

Industrial Technology Annual Advisory Committee and AMT Sub-Committee Meeting
Friday, April 7, 2017 7:00 – 8:30 a.m.

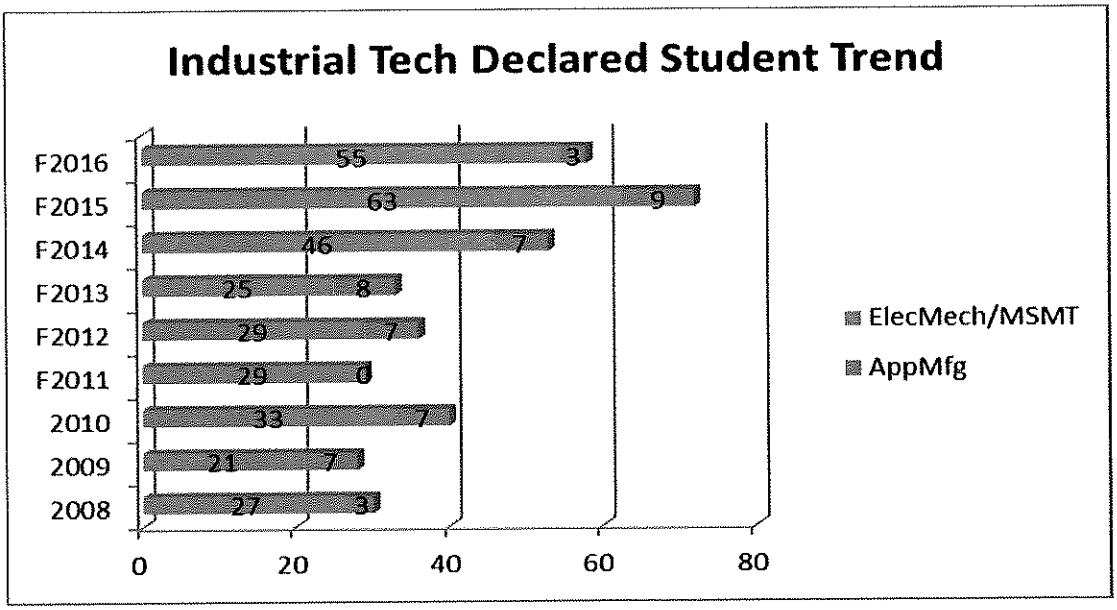
AGENDA

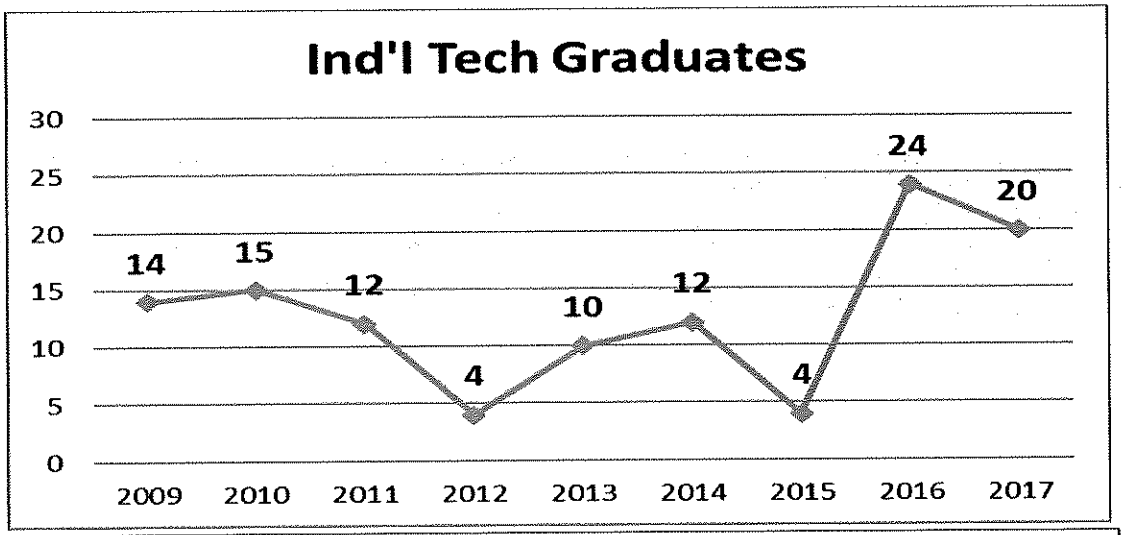
Welcome and Introductions – Reggie Davis, Advisory Committee Chair
Old Committee Business - Progress on McWherter building expansion – Jack Laser
New Business

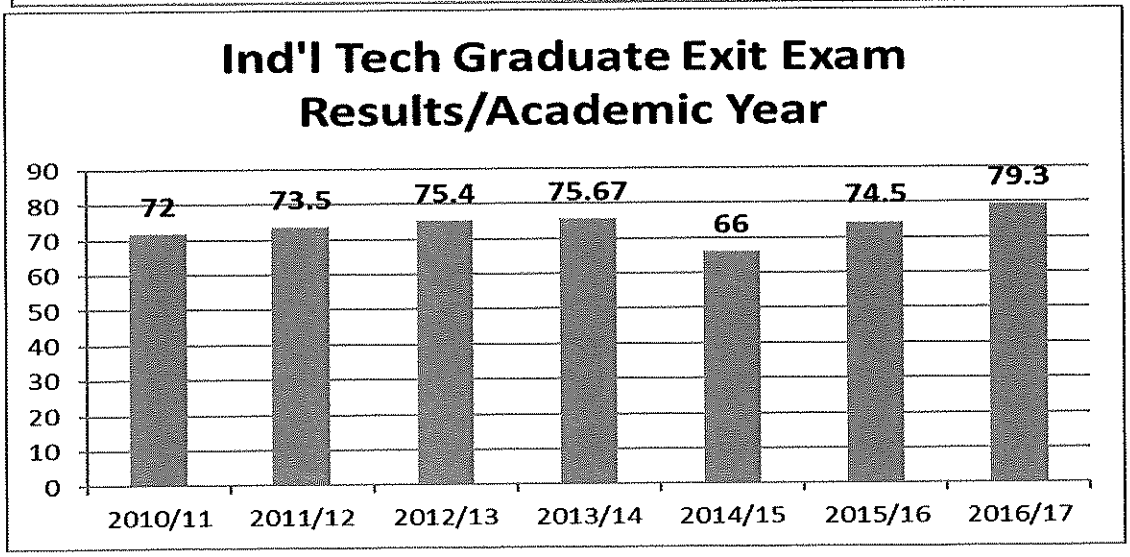
a. Program Updates – Industrial Technology – Terri Messer
    a. Enrollment – see overview sheet
    b. Graduation – see overview sheet
    c. Exit Exam Results – see overview sheet
b. Program Schedule Review – Evening, Morning and Afternoon cohorts – Terri
    a. New FAST TRACK Accelerated Evening Program – see brochure
    b. Daytime cohort review
    c. Staffing needs for area – adjunct and full time instructor search
    d. Early College High School impact in future
c. Program Funding efforts – *DRA Fanuc Authorized Satellite Training Center* - input requested – Jack
d. Program Recruitment Update – Cathi Roberts – see brochure for AMT Cohort 4
e. Statewide Program update on Industrial Technology– Terri – in effect August 2018
f. JSCC instructor industry externships this coming summer – Roger and Ben
g. JSCC staff/instructor specialized training scheduled this summer:
    a. Roger/Cathi to AMT Annual Conference in May
    b. Ben continuing masters in engineering program this summer focusing on graduate level Lean certificate. This will allow him to embed the Lean concepts into future curriculum.
    Roger on track to complete his master's degree in 2017.
h. Curriculum Review – Roger James and Ben Lawrence
    a. Specific Course validation analysis and feedback on:
        i. EET 180 (PLC I) – new approach to hands on labs input- Ben
        ii. EET 230 (PLC II) – additional hands on lab activities - Ben
        iii. EET 200 (Motors/Motor Controls) – incorporate updated trainers – Roger
        iv. EET 270 (Robotics) – need your feedback – see validation sheet – Ben
        v. EET 297 (Auto Processes) – need your feedback – see validation sheet - Roger

Committee Feedback/Input

Industrial Technology Program Statistics - 2016/17







Jackson State Community College

Industrial Technology Program Sequence
Updated April 2017 for 2017/18 Academic Year

YEAR 1

FALL (Late August - early December)

3 IT 150, Industrial Circuits & Safety
3 Eet 130, DC/AC Circuits
3 Engl 1010, Composition I
3 Infs 1010, Computer Applications (Excel/Access)
12 Credit Hours

SPRING (Late January - early May)

3 EET 150, Electro Mechanical Devices
3 EET 180, PLC I
3 Col 1030 - College Navigation - PILOT
3 Math 1530, Statistics
12 Credit Hours

SUMMER (June - July)

3 HUM 1010, Humanities I
3 SPCH 1010, Speech
3 MET 110, Auto Cad
3 ECON 2020, Microeconomics Online
12 Credit Hours

YEAR 2

FALL (Late August - early December)

3 EET 170, Electronics I
3 EET 230, PLC II
3 EET 260, Instrumentation
4 Phys 2010, No Calculs Physics and Lab
13 Credit Hours

WINTER MESTER (Dec-Jan)

3 IT 291, Internship/Co-op Experience

3 Credit Hours

SPRING (Late January - early May)

3 EET 200, Moros/Motor Controls
3 EET 240, Fluid Power
3 EET 270, Robotics
3 EET 297, Automatic Processes
12 Credit Hours

GRADUATION 1ST SATURDAY IN MAY EACH YEAR

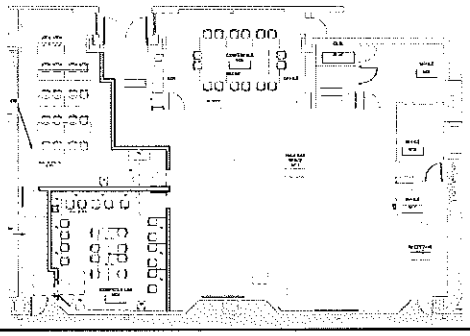
Industrial Technology Advisory/AMT Engineering/Maintenance Sub Committee Meeting

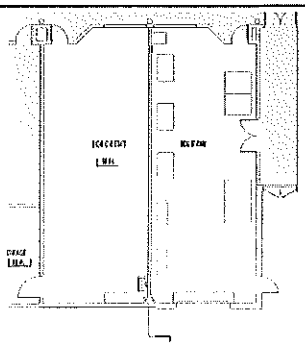
Friday, April 7, 2017
7:00 a.m.
McWherter Center for Advanced Industrial Technology

Meeting Agenda

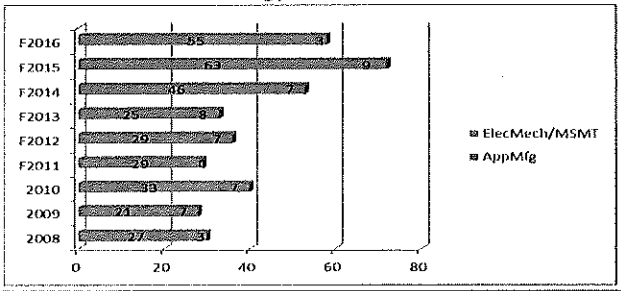
- See packet materials for details:
- Welcome – Reggie Davis, Committee Chairman, TBDN
- Old Committee Business – McWherter Remodel, Jack Laser
- New Business –
  - Program Updates
  - Schedules
  - Program funding efforts
  - Recruitment
  - Statewide Update regarding IT forthcoming 2018/19
  - JSCC faculty/staff training
  - Curriculum Review – Ben and Roger, M131 Labs

McWherter Center for Advanced Industrial Technologies

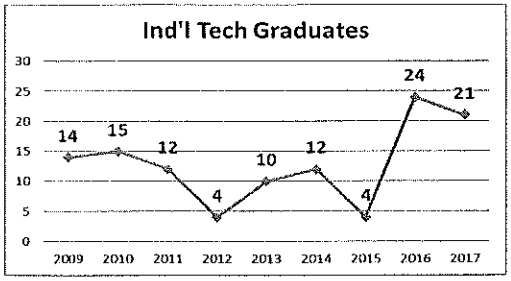




Industrial Technology Declared Student Trend



Industrial Technology Graduates Trend



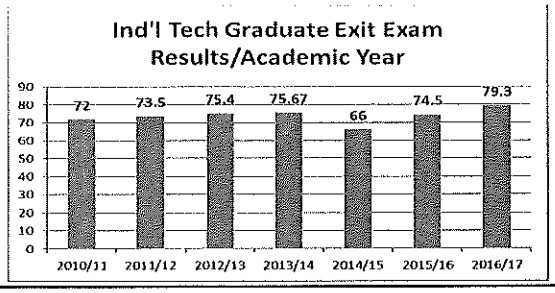
Key Facts of Ind'l Tech Class of 2017

(see info sheet for full details)

- 18 brand new Industrial Technology AMT co-op students began in Fall 2015, there were more students placed, but not all were first year JSCC students.
- 15 co-op students will be graduating May 6, 2017
- That's an **83% completion rate in just two years of college**!!! (National average for community college completion is 39.1% in SIX years!)*
- This compares to a 77% two year completion rate with last year's cohort (began F2014, completed S2016).
- A total of **20 industrial technology students will be graduating this May.**

* *(National Student Clearinghouse Research Center, Shapiro & Dunbar, 2014)*

Comprehensive Exit Exam Results Trend



Jackson State Community College

Industrial Technology Program Sequence
Updated April 2017 for 2017/18 Academic Year

YEAR 1

FALL (Late August - early December)	SPRING (Late January - early May)	SUMMER (June - July)
3 IT 150, Industrial Circuits & Safety	3 EET 150, Electro Mechanical Devices	3 HUM 1010, Humanities I
3 Eet 130, DC/AC Circuits	3 EET 150, PLC I	3 SPCH 1010, Speech
3 Engl 1010, Composition I	3 Col 1030 - College Navigation - PILOT	3 MET 110, Auto Cad
3 Info 1010, Computer Applications (Excel Access)	3 Math 1530, Statistics	3 ECON 2020, Microeconomics Online
12 Credit Hours	12 Credit Hours	12 Credit Hours

YEAR 2

FALL (Late August - early December)	WINTER MI STEP (Dec-Jan)	SPRING (Late January - early May)
3 EET 170, Electronics I	3 IT 291, Internship Co-op Experience	3 EET 200, Motors Motor Controls
3 EET 230, PLC II		3 EET 240, Fluid Power
3 EET 260, Instrumentation		3 EET 270, Robotics
4 Phys 2010, No Calculs Physics and Lab		3 EET 297, Automatic Processes
13 Credit Hours	3 Credit Hours	12 Credit Hours

GRADUATION 1ST SATURDAY IN MAY EACH YEAR

Industrial Technology Course Schedules

- **Daytime Morning and Afternoon Cohort Schedules**
- Consist of two day per week classes in all courses – other college divisions are highly supporting the alternate schedules required to allow the full degree requirements to be met by students coming to campus only two days/week over the five semester span
- Allows students to work the remaining three days/week
- **FAST TRACK Evening Cohort**
- Designed to meet one night per week for mainly seven week, accelerated courses.
- Ability to complete degree program within two years if college ready at the onset
- New cohort beginning in August 2017 (see schedule in packet and to follow)

DRAFT AS OF FEB. 1, 2017

PROGRAM LAUNCH Fall 2017
AAS Industrial Technology
Fast Track Accelerated Pathway - Aug 2017 - Dec 2018

Cohort 1 Plan

Hybrid- Seven Week, Online and Summer Classes

Fall 2017	1st Term Seven Weeks	Weds Evening
IT 150	Industrial Circuits & Safety	5:00-6:50
Infs 1010	Computer Applications	7:00-8:50
	2nd Term Seven Weeks	
EET 130	DC/AC Circuits	5:00-6:50
Engl 1010	English Comp I	7:00-8:50
	Online Full Term	
	Any Humanities Course	15 credit hour term

Suggest: Mus 1030, Phil 2110 or Art 1030

Spring 2018	1st Term Seven Weeks	Weds Evening
EET 180	Programmable Logic Controls I	5:00-6:50
EET 150	Electromechanical Devices	7:00-8:50
	2nd Term Seven Weeks	
EET 230	Programmable Logic II	5:00-6:50
MET 110	Intro Drafting/Auto Cad	7:00-8:50
	Online Full Term	
	Math Course Online	15 credit hour term

Degree Completed in December 2018

****This term's schedule may be adjusted slightly.*

Summer 2018	Maymester Term & 1st Term Five Weeks	Weds Evening
EET 170	Electronics I	5:00-6:50
EET 260	Instrumentation	7:00-8:50
	2nd Term Five Week Term	
Spch 1010	Speech	5:00-8:50
IT 291	Cooperative Internship or Technical Elective	TBA
	Online Full Term Ten Week Term	
Phys 2010	Non Calculus Physics OL	16 credit hour term

Fall 2018	1st Term Seven Weeks	Weds Evening	Saturday labs on selected dates
EET 200	Motors/Motor Controls	5:00-6:50	
EET 270	Robotics	7:00-8:50	
	2nd Term Seven Weeks		
EET 240	Fluid Power	5:00-6:50	
EET 297	Automatic Processes	7:00-8:50	
	Online Full Term		
Econ 2020	Microeconomics		
		15 credit hour term	

We need your help in filling the FAST TRACK cohort…

- Please distribute the informative brochure to employees you feel would be a good fit for this accelerated cohort
- Have them reach out to Roger, Ben, Cathi or myself and we'll get them launched in the right direction

We are looking for a few good men (and/or women)!

- Currently advertising for another Ind'l Tech full time faculty member
- Instructors preferences:
  - Degreed engineer with at least five years of manufacturing experience (need this credential to meet ATMAE accreditation minimum instructor requirements without exceptions documentation required)
  - Or must have bachelors degree in related manufacturing field with at least ten years of relevant manufacturing experience
  - And ability to communicate effectively to a diverse population of students.

Program Funding Efforts

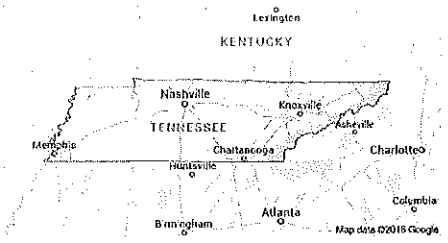
Delta Regional Authority

- FANUC Authorized Satellite Training (FAST) Program
- McWherter Center evolved into the regional robotic training facility
- Jack Laser reached out to several of you for input on your current, and future, robotic needs
- Southwest TN Development District to compile, submit and run/monitor the successful grant award
- Submission due by May

2017/18 Program Recruitment Efforts and Results – Cathi Roberts, Completion Coordinator

- AMT cohort 4 applications due April 17
- Please help by posting this informational brochure up on company bulletin boards
- We've found some of the best program promoters are your current employees sharing the information with their friends/families

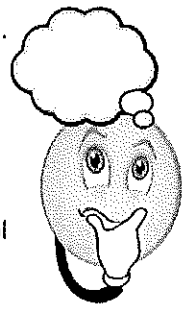
Statewide Curriculum Changes



Curriculum Feedback Needed..

What are your thoughts?

- PLC I and II
- Robotics
- Automatic Processes
- Motor/Motor Control



EET 180, PLC I – see validation sheet

EET 180 – Programmable Logic Controls I (Second Semester Course)
An introduction to programmable logic controllers and their usage in modern industry is covered. Memory addressing schemes and ladder logic are discussed in detail. PLC installation and maintenance are also discussed.

☒	EET 180 Learning Objectives
	a. To impart an understanding and overview of programmable logic controllers.
	b. To familiarize the student with various PLC hardware components and system arrangements.
	c. To familiarize the student with PLC number systems and fundamentals of control logic.
	d. To provide an understanding in basic PLC wiring diagrams and ladder logic programs using industry standards.
	e. The proper use of timers and counters in a variety of PLC ladder logic program applications.
	f. Provide student with various programming examples, opportunities, and skill development.

Additional outcomes expected with curriculum updates started Fall 2016:
____Course has updated hands on lab activities to aid with student's ability to apply concepts to real world situations.

EET 230 – PLC II – see validation sheet

EET 230 – Programmable Logic Controls II (Third Semester Course)
A continuation of EET 180, PLC I. Advanced instruction set and hardware are discussed in depth. Analog I/O, encoders, PID controls, transducers, and internal file structures and usage are the main topics of interest.

☒	EET 230 Learning Objectives
	a. The study and usage of the advanced PLC instruction set.
	b. To develop techniques for handling analog inputs and outputs.
	c. To familiarize the student with PLC solutions to process problems in industry.
	d. To familiarize the students with the role of PLC's in networks.
	e. To provide hands-on experience in intermediate and advanced programming techniques.

Additional outcomes expected with curriculum updates started Spring 2017:
____Course has updated hands on lab activities to aid with student's ability to apply concepts to real world situations.

EET 270, Robotics (reference validation sheet)

EET 270 – Robotics (Last Semester Course)
This course is designed to introduce the concepts of servo control and automation systems uses in industry standard robot control systems.

☒	EET 270 Learning Objectives
	a. Demonstrate powering up and jogging a robot.
	b. Be able to recover from common program and robot faults.
	c. Create, modify, and execute production programs.
	d. Develop an understanding of maintenance and troubleshooting techniques and procedures.

EET 297, Automatic Processes– see validation sheet

EET 297– Automatic Processes (Last Semester Course)
This course is designed to introduce the student to modern process controller uses and control schemes. This control and communication of complex processes are addressed along with sensory devices which pass data back to the controller. Hands-on experience is emphasized in laboratory exercises.

☒	EET 297 Learning Objectives
	1. To impart an understanding and overview of advanced PLC control instructions.
	2. To familiarize the student with various complex PLC components and system arrangements.
	3. To familiarized the student with programming a closed loop system that is used in industry.
	4. To provide an opportunity for students to work together on various projects as a team
	5. To develop troubleshooting techniques on various control systems and processes.
	6. To become familiar with proper documentation that would be required by industry projects.

EET 200 – Motors and Motor Controls – see validation sheet

EET 200 – Motors and Motor Controls
This course covers the principles of converting electrical power into mechanical work and mechanical power into electrical power. The basic electromagnetic principles of mothers, and motor controls are studies. Motor work, efficiency, torque, and speed shall be address in the lab.

☒	EET 200 Learning Objectives
	a. To impart an understanding of electrical motor theory.
	b. To discuss various means of starting, stopping and controlling motors.
	c. To provide hands-on experience in operating and analyzing motor control circuits.
	d. To develop techniques for troubleshooting motor control circuits.

Additional outcomes expected with curriculum updates started Spring 2017:
____Course has updated hands on motion control trainers to aid with student's ability to apply concepts to real world situations.