#### Industrial Technology Annual Advisory Committee and AMT Engineering/Maintenance Sub-**Committee Meeting** Jackson State Community College April 7, 2017 7:00 a.m. - 8:30 a.m.

Meeting called to order and welcome by Reggie Davis, Advisory Committee Chair with the following members Brian Burnett, Jere Cox (Automation), Rich Cunningham (Lyondellbasell), Reggie Davis (TBDN), Christopher Dillow, Bill Flinn, Jeff Garner (TBTN), Darrel Johansen, Rob Kirts (Stanley Black and Decker), Michael March (Stanley Black and Decker), Dan Rodenbaugh (TCAT Jackson), Paul Williams, Chris Zamora (Owens Corning) and from JSCC: Roger James, Jack Laser, Ben Lawrence, Steve Mayfield, Terri Messer, Cathi Roberts and Janice Taylor.

Committee Chair noted to all committee members to be involved and engaged with students at their respective companies.

### Old Committee Business: Progress on McWherter Building Expansion:

- Building was built with the intent of being industrial technology only.
- > Previously, a lot of space was converted for Nursing. Nursing has moved to their new building.
- Occupational Therapy Assistant (OTA) and Physical Therapy Assistant (PTA) programs are housed in McWherter. At the end of the semester, both programs will be moving to their new building (Health Sciences).
- More space has opened up to provide additional classroom space, welding booths.
- Conversions will be made to go back to high bay areas
- Working on a grant through Delta Regional Authority (DRA) that focuses on robots. a certified robotic training center. We have to have at least five robots where we can certify people here by FANUC and to show there is a need/demand and local industry supports it.
- State only funds 40%, the remainder comes from tuition.

#### **New Business**

#### Program Updates

Enrollment – declared means they have chosen Industrial Technology as a major (see attached overview sheet). Bring in a new cohort of 25-30 students which will lead to 20-25 graduates each year. Our goal is to get them in the door and out the door with a degree.

Graduation - (see attached overview sheet)

Exit Exam Results - (see attached overview sheet) - How well prepared are they? We have a comprehensive exit exam that each student has to take. The average score is 79.3 which means they were able to retain the technical material

#### Program Schedule Review

New FAST TRACK Accelerated Evening Program – starting this fall, the FAST TRACK Industrial Technology Program Accelerated Evening Program will be launched

The best recruiter is people who work in your facilities.

FAST TRACK is designed to come one evening per week.

Daytime cohort review - Consist of two days per week classes in all courses Allows students to work the remaining three days/week

Faculty staffing needs for area -

Currently advertising for another Industrial Tech full-time faculty member.

Degreed engineer with at least five years of manufacturing experience; or

Must have bachelor's degree in related manufacturing field with at least ten years of relevant manufacturing experience

Ability to communicate effectively to a diverse population of students

Early College High School impact in future - JMC schools interested high school students will be coming to the JSCC campus beginning in Fall 2017 for dual credit courses in Ind'l Tech and/or general education classes that lead to an associates degree.

Program Funding Efforts - Jack Laser is requesting your input

#### Program Recruitment Update - Cathi Roberts

Application deadline is April 17.

Some barriers: #1 barrier is parents.....we attended a parent meeting at McNairy County High School - #2 barrier is school officials.....perhaps they don't understand what we do.

We have a commercial series that highlights what our students are doing and how successful they are.

Statewide Program update - We are going to see some statewide curriculum changes.

Adding material in manufacturing classes

Name change – state is recommending program change to: Engineering Technology

JSCC instructor industry externships - Roger and Ben will be

JSCC staff/instructor specialized training scheduled this summer -

Roger and Cathi will attend the AMT Annual Conference in May

Ben continuing work on maters in engineering program

Roger on tract to complete his master's degree in 2017.

#### Curriculum Review -

Roger and Ben would like your feedback on the following courses:

EET 180 (PLC 1), EET 230 (PLC 11), EET 200 (Motors/Motor Controls), EET 270 (Robotics)

EET 297 (Auto Processes)

Committee members experienced course lab components and were asked to complete and submit the per course feedback evaluation sheets.

See minute's appendix for feedback suggestion information.

Minutes recorded by Janice Taylor

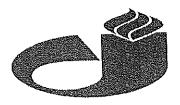
Jason's Deli: Breakfast (breakfast sandwiches, fruit, coffee) provided by Jason's Deli.

### **APPENDIX A**

# Industrial Technology Curriculum Validation

**April 2017** 

Feedback for EET 180, PLC I



# Industrial Technology Curriculum Validation - April 2017

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.

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.

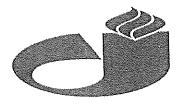
X		EET 180 Learning Objectives
<u>                                    </u>		the state of programmable logic controllers.
	a.	To impart an understanding and overview of programmators regularized the student with various PLC hardware components and system arrangements.  To familiarize the student with various PLC hardware components and system arrangements.
	b.	To familiarize the student with various 1 to native and fundamentals of control logic.
	c.	To familiarize the student with PLC number systems and fundamentals of control logic.  To familiarize the student with PLC number systems and fundamentals of control logic.
38333	d.	To familiarize the student with PLC number systems and tandams.  To provide an understanding in basic PLC wiring diagrams and ladder logic programs using
	,	industry standards.
	e,	industry standards.  The proper use of timers and counters in a variety of PLC ladder logic program applications.  Provide student with various programming examples, opportunities, and skill development.
	f.	Provide student with various programming examples, opportunities,

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.

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

TITIS CLASS SEZEMS TO BE FINE.

Name: 12013 Kings	Company: SBD
Date: 4/7/17	



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Ϋ́	b.	To familiarize the student with various PLC hardware components and system and a familiarize the student with various PLC hardware components and system a
X		To familiarize the student with PLC number systems and fundamentals of control logic.  To provide an understanding in basic PLC wiring diagrams and ladder logic programs using
	d.	To provide an understanding in basic PLC wiring diagrams and ladder region provide an understanding in basic PLC wiring diagrams and ladder region provide an understanding in basic PLC wiring diagrams and ladder region provide an understanding in basic PLC wiring diagrams and ladder region provide an understanding in basic PLC wiring diagrams and ladder region provide an understanding in basic PLC wiring diagrams and ladder region provide an understanding in basic PLC wiring diagrams and ladder region provide an understanding in basic PLC wiring diagrams and ladder region provide an understanding in basic PLC wiring diagrams and ladder region provide an understanding provide an understand provide an understanding provide an understand provide an understanding provide an understand provide an understanding provide an understand provide an understanding provide an understanding provide an understanding provide an understand provide an
$ \chi $		industry standards.  The proper use of timers and counters in a variety of PLC ladder logic program applications.  The proper use of timers and counters in a variety of PLC ladder logic program applications.
Υ	e.	The proper use of timers and counters in a variety of the radial region programment.
X	f.	The proper use of timers and counters in a variety of 120 and skill development.  Provide student with various programming examples, opportunities, and skill development.

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

Please list any further topics you feel would enhance the PLC 1 class: make sure students are ownere of multiple the manufactures.

Name: hermald Davo	Company: TBDN
Date: 4/7/17	



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		TITE 400 I Objectives
X		EET 180 Learning Objectives
	a.	To impart an understanding and overview of programmable logic controllers.
		The control of the student with various PLC hardware components and system arrangement
		a ti
	d.	To familiarize the student with FLC number systems and ladder logic programs using 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.  The proper use of timers and counters in a variety of PLC ladder logic program applications.
3.55	f.	The proper use of timers and counters in a variety of 1 Be taction of the 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.

Please list any further topics you feel would enhance the PLC 1 class:
1) Communications - Network
2) Noise 3) Routing Cables-Pawer & Controls / PLCII wrong shoet
3) Routing Cables i due
Name: Company: 1811
Date:



### Industrial Technology Curriculum Validation – April 2017

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		EET 180 Learning Objectives
区		The standing and overview of programmable logic controllers.
	a.	To impart an understanding and overview of programmer of the student with various PLC hardware components and system arrangements.
	b	To familiarize the student with various FLC hardware components of control logic.
	c.	To familiarize the student with PLC number systems and fundamentals of control logic.
A11 (12 to 12	d.	To familiarize the student with The number systems and ladder logic programs using To provide an understanding in basic PLC wiring diagrams and ladder logic programs using
		1 1 4 4-4-danda
	e.	The second 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.

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

. More time on the Lalder Logic AND how it Differs From hardwired Dingrams, or Real world wiring.

Name:	STEVE MAYFIELD	Company:	JSCC	
Date:	4-7-2017			



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		- a vii · the atadent with verious PLC nardware components and system artists
	c.	To familiarize the student with PLC number systems and fundamentals of control logic.  To provide an understanding in basic PLC wiring diagrams and ladder logic programs using
	d.	To provide an understanding in basic PLC withing diagrams and hadden to get the
	e.	The proper use of timers and counters in a variety of PLC ladder logic program applications.  Provide student with various programming examples, opportunities, and skill development.
	f.	Provide student with various programming examples, opportunities, and similar programming examples and similar programming e

Additional outcomes expected with curriculum updates started Fall 2016:	vorld
Additional outcomes expected with curricular appeares started and apply concepts to real way.  Course has updated hands on lab activities to aid with student's ability to apply concepts to real way.	
situations.	

Name:	La Bunt	Company: TBTN
Date:	4/7/17	



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		To familiarize the student with PLC number systems and fundamentals of control logic.
	<u>d.</u>	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.

Name:	Darrel	Johanson	 Company:	Toyota	Bodine	
Date: _	4-7-17					



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		industry standards.
X	e.	The proper use of timers and counters in a variety of PLC ladder logic program applications.
X	f.	Provide student with various programming examples, opportunities, and skill development.

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

Please list any further topics you feel would enhance the PLC 1 class: Instructions werd to odd exposure to other PLC VENDORS

Name: lose lose	Company: LMI
Date: ( 4-7-17	



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<del>- X</del> - -	1_	To familiarize the student with various PLC hardware components and system arrangements.
<u> </u>		To familiarize the student with PLC number systems and fundamentals of control logic.
X	<u></u>	To provide an understanding in basic PLC wiring diagrams and ladder logic programs using
X X X		in Averture et and and c
Х	e.	The properties of timers and counters in a variety of PLC ladder logic program applications.
X	<u>f.</u>	Provide student with various programming examples, opportunities, and skill development.

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

Name:	Rich Cunningham.	Company: _	Lyondell basell	_
Date: _	4-7-17			

### **APPENDIX A**

# Industrial Technology Curriculum Validation

**April 2017** 

Feedback for EET 200, Motors/Motor Controls



## Industrial Technology Curriculum Validation - April 2017

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.

**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.

X		EET 200 Learning Objectives
	a.	To impart an understanding of electrical motor theory.
		m " " " " " " " " " " " " " " " " " " "
2000 AS		The movide hands on experience in operating and analyzing motor control
		To develop techniques for troubleshooting motor control circuits.
CONTRACTOR AND	a.	10 develop techniques 102

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.

Please list any further topics you feel would enhance the Motors and Motor Controls class: THE GUYS REALLY NEED TO UNDOESTAND HOW TO WIRE MOTOR INTO THE PANEL.
THEY WEED TO BE ABLE TO TROUBLESHOOT 30 MOTOR CONTROLS WITH A MULTIMETER. (VOHS, OHMS, AMPS). THIS NEEDS TO BE HANDS ON" PUTTING A SYSTEM FOGETHER. GOT THEM TO UNDOUSTAND MOTOR AND MOTOR STANTERS COMPLETELY BEFORE INTRO TO IF Michael + 1 CAN HELP "SHOW IT" LET US KNOW NO WILL MAKE TIME TO THE DRIVES.

COME back over AND DELLO IF NEEDED.

Name: ROB KIRTS	Company: _	<u> </u>
Date: <u>4/7/17</u>		



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

7 Additional outcomes expected with curriculum updates started Spring 2017:

X Course has updated hands on motion control trainers to aid with student's ability to apply concepts to real world situations.

Please list any further topics you feel would	l enhance the Motors and Motor Controls class:
. Basic safety . Understanding components - Motor	starters, relays, overloads etc.
Name: Resmale Daws	Company: TBDN
D-tax 7 / // /	



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IXI		EET 200 Learning Objectives
$ \overline{\mathbf{x}} $	a.	To impart an understanding of electrical motor theory.
X	1	T- discuss various means of starting stopping and controlling motors.
X	c.	To provide hands-on experience in operating and analyzing motor control circuits.
X	d.	To develop techniques for troubleshooting motor control circuits.

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

Please list any further topics you feel would enhance the Motors and Motor Controls class:

	1000 MINING MINING	Company:	LyondellBasell
Date:	4-7-17		



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2000	l.	To diggues various means of starting, stopping and controlling motors.
151125.00	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.

Please list any further topics you feel would enhance the Motors and Motor Controls class:

1) Look at Trouble shooting + How To?



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IXI	EET 200 Learning Objectives
X	a. To impart an understanding of electrical motor theory.
	to The discourse means of starting stonning and controlling motors.
	b. To discuss various means of starting, scopping and analyzing motor control circuits.  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.

Please list any further topics you feel would enhance the Motors and Motor Controls class:

A-Speno Time AT the First Class, go thru Fluke merer Training + how to use the

Name: STEVE MAYFIELD Date: 4-7-2017



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[X]	EET 200 Learning Obje	
	a. To impart an understanding of electrical motor theory	/.
	b. To discuss various means of starting, stopping and co	ontrolling motors.
	c. To provide hands-on experience in operating and ana	lyzing motor control circuits.
	d. To develop techniques for troubleshooting motor con	trol 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.

Please list any further topics you feel would enhance the Motors and Motor Controls class:

· How to Chell a motor to see if it is BAD.

· trouble shooting SK.115.

Name: <u>BRIAN BURNETT</u> Company: <u>TBIN</u>

Date: <u>4/7/17</u>



## Industrial Technology Curriculum Validation – April 2017

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X	EET 200 Learning Objectives	-
	a. To impart an understanding of electrical motor theory.	1
	the state of the s	1
	b. To discuss various means of starting, scopping and analyzing motor control circuits.  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.

Please list any further topics you feel would enhance the Motors and Motor Controls class:

A Better understanding of Basic components is needed. Hands on, Assembling a motor circuit from nothing, instead of a pre-built circuit, would Help Hem Detter understand each component's function and also aid in troubleshooty.

Name: _	Darrel Johanson	Company:	Toyota	Bodine_
Date: _	4-7-17			



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	1.	To discuss various means of starting, stopping and controlling lilouis.
		To provide hands-on experience in operating and analyzing motor control enems.
7.75	d.	To develop techniques for troubleshooting motor control circuits.

Additional outcomes expected with curriculum updates started Spring 2017:

Please list any further topics you feel would enhance the Motors and Motor Controls class:

Course has updated hands on motion control trainers to aid with student's ability to apply concepts to real world situations.

Please list any further topics you feel would	where the student has to take
A box of components A	nd exercises a wonking system
,	
à /	
Name: 1010 loss	Company:
Date: 4-7-17	

### **APPENDIX A**

# Industrial Technology Curriculum Validation

**April 2017** 

Feedback for EET 230, PLC II



### Industrial Technology Curriculum Validation – April 2017

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.

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.

IX		EET 230 Learning Objectives
X	a.	The study and usage of the advanced PLC instruction set.
	1.	To devial on techniques for handling analog inputs and outputs.
25 (54) A	-	To familiarize the student with PLC solutions to process problems in musu y.
10000	1	The Constitution the students with the role of PLC's in networks.
X-50-0-10	e.	To provide hands-on experience in intermediate and advanced programming techniques.

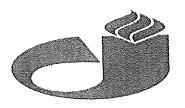
Additional outcomes expected with curriculum updates started Spring 2017:

Course has updated hands on lab activities to aid with student's ability to apply concepts to real world situations.

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

DON'T GO DEED INTO THE EXTERS - MAKE SUIE THE GUYS CAN TRULY READ laddon logic and howe a real good understanding. Can they actually hookup and trouble shoot when the Day is done?

Name: ROB KINTS	Company: SPD
Date: 4/7/17	



### Industrial Technology Curriculum Validation - April 2017

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.

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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.

	Ol institutes
X	EET 230 Learning Objectives
	a. The study and usage of the advanced PLC instruction set.
X	to To develop techniques for handling analog inputs and outputs.
$\frac{1}{x}$	2. To familiarize the student with PLC solutions to process problems in industry.
X	1 By C. II will the students with the role of PLC's in networks,
X	<ul> <li>d. To familiarize the students with the fold of 125 section and advanced programming techniques.</li> <li>e. To provide hands-on experience in intermediate and advanced programming techniques.</li> </ul>

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.

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

• Programming Safety - When to use PLC's.

Name: Lagural Davis  Date: 4/1/17	Company: TBDN
Date: 4/1/17	



### Industrial Technology Curriculum Validation - April 2017

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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
<u>                                    </u>		
X	a.	The study and usage of the advanced PLC instruction set.
X X X X X	h	To develop techniques for handling analog inputs and outputs.
χ	c.	To familiarize the student with PLC solutions to process problems in industry.
X	d.	To familiarize the students with the role of PLC's in networks.
χ	e.	To provide hands-on experience in intermediate and advanced programming techniques.

Additional outcomes expected with curriculum updates started Spring 2017:

X Course has updated hands on lab activities to aid with student's ability to apply concepts to real world situations.

	Zuca Cunning	wan	Company: _	LyondellBasell
Date:	4-7-17			



#### Industrial Technology Curriculum Validation - April 2017

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.

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.

X	•	EET 230 Learning Objectives
X	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.
		To familiarize the students with the role of PLC's in networks.
	е.	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.

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

See PLCI Note

Name: Company: TBTN



### Industrial Technology Curriculum Validation - April 2017

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.

EET 230 - Programmable Logic Controls II (Third Semester Course)

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

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.

X		EET 230 Learning Objectives
	a.	The study and usage of the advanced PLC instruction set.
	h	To develop techniques for handling analog inputs and outputs.
		To familiarize the student with PLC solutions to process problems in industry.
		To familiarize the students with the role of PLC's in networks.
	e.	The least 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.

Please list any further topics you feel water from SAME ALONG SAME AND NOW FLC's	ould enhance the PLO Line A.B. Petwork	tender Thru E	on Ladder 1thernet.	Logic,
Name: STEVE MAYFIE	<b>y</b> c	Company:	<u> </u>	
Date:				



### Industrial Technology Curriculum Validation - April 2017

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.

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.

X		EET 230 Learning Objectives
	a.	The study and usage of the advanced PLC instruction set.
	1.	To develop techniques for handling analog inputs and outputs.
	c.	To familiarize the student with PLC solutions to process problems in industry.
000000	d.	To familiarize the students with the role of PLC's in networks.  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.

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

- . Trankle shooting Faults in a program.
- · Track wires down to Look For clamate.

Name: Faim Burner Company: TBTN

Date: 4/7/17



### Industrial Technology Curriculum Validation - April 2017

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.

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.

T		EET 230 Learning Objectives
X		EET 250 Learning Objectives
0.0000000000000000000000000000000000000	a.	The study and usage of the advanced PLC instruction set.
	h	To develop techniques for handling analog inputs and outputs.
	C	To familiarize the student with PLC solutions to process problems in industry.
380.880	1	T- familiarize the students with the role of PLC's in networks.
	e.	The bands 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

Name: _	Darrel Johansen	Company:	Toyota	Bodine
Date: _	4-7-17			



### Industrial Technology Curriculum Validation – April 2017

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.

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.

াতা		EET 230 Learning Objectives
X	a.	The study and usage of the advanced PLC instruction set.
X X X X	1_	To develop techniques for handling analog inputs and outputs.
$\nabla$	c.	To develop techniques for management of the student with PLC solutions to process problems in industry.  To familiarize the student with PLC solutions to process problems in industry.
í ýx	d.	To familiarize the students with the role of PLC's in networks.  To provide hands-on experience in intermediate and advanced programming techniques.
Y	e.	To provide hands-on experience in intermediate and advanced programming even

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.

Please list any further topics you feel would enhance the PLC II class: Rockwell Add ON Instructions

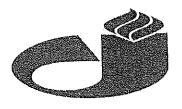
Name:	Company:
Date:	

### **APPENDIX A**

# Industrial Technology Curriculum Validation

**April 2017** 

Feedback for EET 270, Robotics



### Industrial Technology Curriculum Validation - April 2017

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.

EET 270 - Robotics (Last Semester Course).

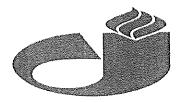
This course is designed to introduce the concepts of servo control and automation systems uses in industry standard robot control systems.

रा		EET 270 Learning Objectives
	a,	Demonstrate powering up and jogging a robot.
	ь.	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.

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

LOOKED GOOD

Name:	200	KIRTS	Company: _	SBD	
Date:	4/7/17				



### Industrial Technology Curriculum Validation - April 2017

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.

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.

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

- · Robot Safety · Robot Axis types

Name:	Leginald Davis	Company: _	TBON	
Date:	4/7/17			



#### Industrial Technology Curriculum Validation – April 2017

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.

#### 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.

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

Name: 1404	t Cunningham	Company: _	Lyondell Basel	
Date:	4-17-17			



### Industrial Technology Curriculum Validation - April 2017

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.

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.

X		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.

Name:	Dorn	 Company:	TBTN	
11717	,			



### Industrial Technology Curriculum Validation - April 2017

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.

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.

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

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

Spend more Time on Recovering From ceashes getting back to home position and clearing Faults.

Name: STEVE MAYFIED Company: 55CC

Date: 4-7-2017



### Industrial Technology Curriculum Validation - April 2017

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.

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.

X		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.

Name:	Bast	Company: TOTN
Date:	417/17	



#### Industrial Technology Curriculum Validation - April 2017

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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.

X		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.			

Name: _	Darrel Johansen	Company:	Toyotu	Bodine
Date: _	4-7-17			



#### Industrial Technology Curriculum Validation – April 2017

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This course is designed to introduce the concepts of servo control and automation systems uses in industry standard robot control systems.

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

Name:	tree love	Company:	CMI	
Date: _	4-7-17			

### **APPENDIX A**

# Industrial Technology Curriculum Validation

**April 2017** 

Feedback for EET 297, Automatic Processes



### Industrial Technology Curriculum Validation - April 2017

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.

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.

[X]		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
W Water SWEET		owen gements
	3.	To familiarized the student with programming a closed loop system that is used in
3000		industry.
	4.	To provide an opportunity for students to work together on various projects as a team
		To devolor troubleshooting techniques on various control systems and processes.
100 m	6.	To become familiar with proper documentation that would be required by industry
		projects.

Please list any further topics you feel would enhance the Automatic Processes class:

STUDENTS COULD USE THIS CLASS TO ACTUALLY build a PLC - DOWER, SELECT COKETCT CARDS, ADDRESS, WIRE AND RUN + TROUBLESHOOT. MAYEE DRIVE OR DEVICE INTERFACE.

Name: Rob KINGS	Company: 500
Date: 4/7/17	



#### Industrial Technology Curriculum Validation - April 2017

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.

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

Please list any further topics you feel would enhance the Automatic Processes class:

· Safety aspect · LOTO Lock out tag out · An flash NFPA-70E

Name: Reginal Ows Company: TBDN



#### Industrial Technology Curriculum Validation – April 2017

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.

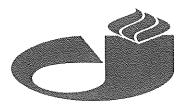
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X		EET 297 Learning Objectives
X	1.	To impart an understanding and overview of advanced PLC control instructions.
	2.	To familiarize the student with various complex PLC components and system
X		arrangements.
.,	3.	To familiarized the student with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

Please list any further topics you feel would enhance the Automatic Processes class:

Name:	Rich Cunningham	Company:	Lyondell Basell	
Date: _	4-7-17			



#### Industrial Technology Curriculum Validation - April 2017

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100 300		
	1.	To impart an understanding and overview of advanced PLC control instructions.
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		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.

Please list any further topics you feel would enhance the Automatic Processes class:

Name: Oar	m	Company: TBTN	
Date: 4/7//			



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X		EET 297 Learning Objectives
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		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
44903A	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.

Please 1	ist any further topics you feel would enha	nce the Automatic Processes class:	_
	USE Simple chose To show how Loop be EASKR TO TROUB	2 Loop with Few components	<del>,</del>
	STEVE MAYEVELD 4-7-2019	Company: TS CC	



### Industrial Technology Curriculum Validation - April 2017

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X		EET 297 Learning Objectives
		IDIO - turbing
\$10.55000 \$30.00000	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
		To develop troubleshooting techniques on various control systems and processes.
3000000		To become familiar with proper documentation that would be required by industry
8878885	6.	To become familiar with proper documentation that would be required by including
		projects.

Please list any further topics you feel would enhance the Automatic Processes class:

Name:	Bra Brent	Company:	TBTN	
Date: _	4/7/17			



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区		EET 297 Learning Objectives
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	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.

Please list any further topics you feel would enhance the Automatic Processes class:

Name: _	Darrel	Johansen	Company:	To 10 tu	Bodine	
Date: _	4-7-17					



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X	EET 297 Learning Objectives		
1/	1.	To impart an understanding and overview of advanced PLC control instructions.	
, ,	2.	To familiarize the student with various complex PLC components and system	
V		arrangements.	
7	3.	To familiarized the student with programming a closed loop system that is used in	
V		industry.	
	4.	To provide an opportunity for students to work together on various projects as a team	
1/	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.	

Please list any further topics you feel would enhance the Automatic Processes class:

Add ord Instruction PLC TRAining

Name:	Jew We	Company: Chack
Date:	0 4-7-17	