NC3 - FESTO NATIONAL CERTIFICATION PROGRAM

LESSONS LEARNED

FSCJ Florida State College at Jacksonville

College of Lake County Connect to Your Future

NSF

Hi Tec CONFERENCE – July 2021

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"*Education is not the filling of a pail, but the lighting of a fire.*"

William Butler Yeats

National Science Foundation Grant - 1902431

LESSONS LEARNED

NC3

National Coalition of Certification Centers

NC3

National Coalition of Certification Centers

ENTRY LEVEL

Certification Center

Entry-level participation designed for high schools, colleges, and other education institutions looking to offer certifications on a small scale and limited budget.

STRATEGIC START

NC3Start School

Strategic participation designed for education institutions who want to start engaging in the NC3 Network, beyond the entry-level participation as an NC3 Certification Center, through key NC3 programs and partnerships.

PREMIER LEVEL

Leadership School

High-level participation designed for leading, competitive education institutions who want to shape, elevate, and model world-class CTE learning as a National Center of Excellence, partner closely with global industry leaders, and leverage the advancements of the NC3 network.

GETTING STARTED

Florida State College in Jacksonville

- Automotive receives a grant from Toyota for the first years membership fee.

CLC and FSCJ partnered on an NSF Colloborate Grant

- Carrying on the project with a new NSF Grant

NC3 PARTNER COMPANIES

Table

You can

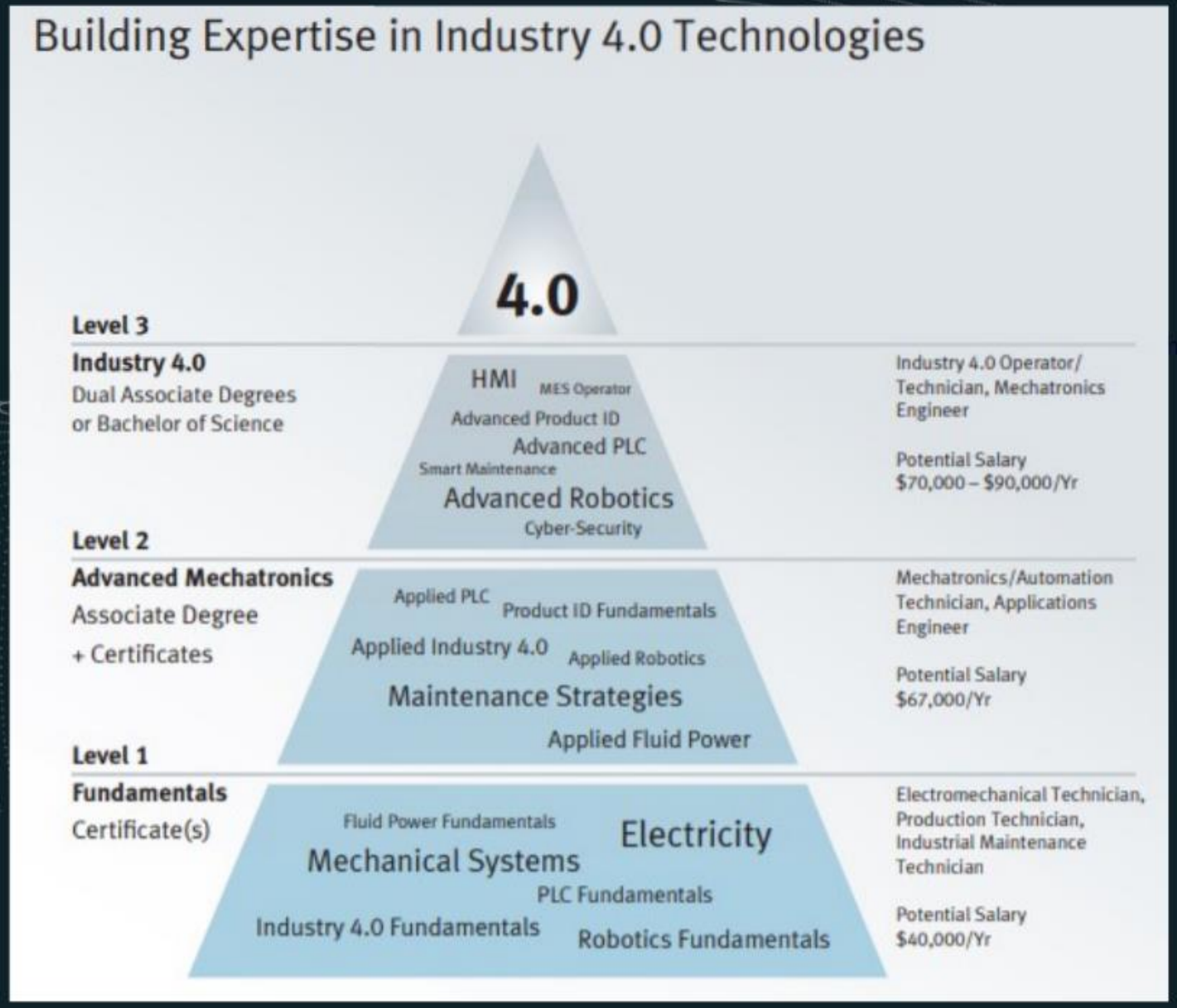
Snap-on

FESTO

3M

Starrett

DREMEL



FESTO INDUSTRY 4.0

TARGETED COURSES

Florida State College in Jacksonville

Courses	Certificate
Survey of Electronics	Snap-On Multimeter Fundemantals of DC Electronics Fundementals of AC Electronics
Hydraulics/Pneumatics	Fundementals of Hydraulics Fundementals of Pneumatics
Robotics	Robotics Fundementals Applied Robotics
Introduction to Manuf. Processes	Introduction to Industry 4.0 Introduction to Mechatronics 3D Printing

TARGETED COURSES

Florida State College in Jacksonville

Courses	Certificate
Mechanical Systems	Mechanics Applied Mechanics
Intro to PLC	Fundementals of PLC
Osha	3M Safety
Ind. Applications in Instrumentation	Applied PLC
Capstone	Sensors Applied Indutry 4.0

TARGETED COURSES

College of Lake County

Courses	Certifications
Automation I, II, III	Introduction to PLC
Automation IV, V, VI	Sensors Applied PLC
Electrical Systems I, II, III	Fundemantals of DC Electronics Fundementals of AC Electronics
Industrial Robotics I ,II, III	Intro to Robotics
Pneumatics & Hydraulics	Introduction to Pneumatics
Capstone	Introduction to Industry 4.0

EQUIPMENT REQUIREMENTS

Florida State College in Jacksonville

Had:
Lab Volt / Festo
Pneumatics/Hydraulics Trainers
Sensors Trainer
Robotics Software

Purchased:
AC/DC Trainers
PLC Trainers
Snap On Metering Cart
Fanuc MPS Robotics Cart *
Additional Pneunmatics Equipment
Dremel 3D Printers *

College of Lake County

Had:
No Qualified Equipment

Purchased:
AC/DC Trainers
PLC Trainers
Robotics Software
Fanuc MPS Robotics Cart
Pneunmatics Trainer

	Course	# of faculty completed	# of faculty planned	Remain to be trained	Who is Trained	Who Remains	When (est)
1	Industry 4.0	4	3	0	Patrick, Alan, Sarah, Kevin		
2	PLC	2	2	0	Patrick, Kevin		
3	Mechanics	1	2	1	Kevin	Sarah	F 21
4	Sensors	3	2	0	Patrick, Kevin, Alan		
5	AC Electricity	3	2	0	Alan,Sarah, Chris		
6	DC Electricity	3	2	0	Alan,Sarah, Chris		
7	Pneumatics	2	2	0	Alan, Patrick	Kevin	F 21
8	Hydraulics	1	2	1	Alan	Kevin	F 21
9	Robotics	1	2	1	Alan, Patrick		
10	Multimeter	1	1	0	Alan	Chris	F 21
11	Precision Measuring #	1	1	0	Patrick		
12	Advanced Measuring		0	0			
13	Applied PLC #	1	1	0	Patrick		
14	Applied Mechanics	1	2	1	Kevin	Sarah	F21
15	Applied Industry 4.0	1	1	0	Patrick		
16	Applied Robotics	1	2	1	Alan		
17	3M Safety #	1	1	0	Sarah		
18	Intro to Mechatronics #*	1	2	1	Alan	Kevin	F21
19	3D Printing *	1	0	-1	Kevin	Patrick	F21

Florida State College in Jacksonville

TRAINING PLAN

College of Lake County

TRAINING PLAN

	Course	# of faculty completed	# of faculty planned	Remain to be trained	Who is Trained	Who Remains	When (est)
1	Industry 4.0	1	1	0	Margie	Ken	FY 22
2	PLC	0	2	2		Margie/Ken	FY 22
3	Sensors	0	2	2		Margie/Ken	FY 22
4	AC Electricity	0	2	2		Ken/Bill K.	FY 22
5	DC Electricity	0	2	2		Ken/Bill K.	FY 22
6	Pneumatics	1	3	2	Ken	Margie/Vasko	FY 22
7	Robotics	2	3	1	Margie/Ken	Vasko	FY 22
8	Applied PLC	0	2	2		Margie/Ken	FY 22

COSTS

Annual Registration $1000

Equipment FSCJ : $85,000

Equipment CLC: $85,000

Average Training Registration : $275 day*

(Training can be from 1-4 days)

DATA

Florida State College

Cert Exam	2019	%	2020	%	Total	Total %
Intro to PLC			11	100%	11	100%
Mechanics	3	50%	22	73%	25	62%
Sensors	46	75%	0		46	38%
Fund. AC					0	0%
Fund DC			38	81%	38	81%
Pneumatics	55	69%	49	76%	104	73%
Hydraulics	53	79%	40	71%	93	75%
Robotics			39	72%	39	72%
SanpOn Meter	80	88%	38	100%	118	94%

DATA

College of Lake County

Cert Test	Students Certified	Pass Percentage
Intro to Industry 4.0	7	100%
Pneumatics	7	78%
Robotics	7	82%

STUDENT FEEDBACK

Florida State College

What was your approximate score on the Festo Robotics exam?	# of students
90-100	3
80-89	18
70-79	11
below 69	8

STUDENT FEEDBACK

Florida State College

How diligent were you watching the Festo Robotics Lectures?	# of students
Watched every one	22
Missed 1-2	9
Missed more than 2	9
What is Festo Robotics?	0

STUDENT FEEDBACK

Florida State College

Do you think the in-class labs prepared you for the Cert Test?	# of students
Very Much	16
They helped	15
Not much help	7
No help at all	2

STUDENT FEEDBACK

Florida State College

Do you think the simulations helped prepare you for the Cert Test?	# of students
Very Much	14
They helped	15
Not much help	9
No help at all	2

STUDENT FEEDBACK

Florida State College

How many cert questions did you feel totally unprepared for?	# of students
0	3
1-5	22
6-10	11
11-15	1
more than 15	3

STUDENT FEEDBACK

Florida State College

What could have better prepared you for the Cert exam?	# of students
More studying	9
Re-watch lecture video	5
Textbook summary	4
Practice exam	3

POSITIVE OUTCOMES

1. Re-evaluate course content to make sure you are covering all outcomes

2. New updated equipment

3. Elimination of textbooks (in most cases)

4. Marketing to prospective students and industry

5. Stackable credentials

6. Student analysis of performance

RECOMENDATIONS

1. Need for *outstanding* trainers

2. More training sites and opportunities

3. Tests need more analysis type questions

4. Tests need to be vetted for questions not covered in the content

5. Question performance data needs to be shared with instructor

Thanks for you attention

Any question? Contact Alan Zube
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