

WEBVTT

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00:00:04.290 --> 00:00:10.800

Bob Sompolski: Okay well good day everybody and i'd like to welcome you to our Hi-Tec presentation, my name is Bob Sompolski.

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00:00:11.340 --> 00:00:18.090

Bob Sompolski: i'm the dean of stem health careers at Oakton Community college located just north of O'Hare field outside Chicago.

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00:00:18.869 --> 00:00:22.920

Bob Sompolski: I'm the one of the Co-PIs for the National Center for supply chain automation.

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Bob Sompolski: As well as a CO-PI on the Collaboration of Midwest Professionals for logistics Engineering Technology Education project and we will be referring to that as the COMPLETE grant.

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Bob Sompolski: I'm joined by Ned Young a professor of management and MIS at Sinclair Community College in Dayton Ohio who is also a CO-PI for the national Center as well as the COMPLETE grant.

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00:00:49.980 --> 00:00:59.250

Bob Sompolski: From Columbus State Community College we're joined by Jeremy Banta.

Jeremy's the assistant professor and program coordinator of supply chain management.

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00:01:00.030 --> 00:01:12.180

Bob Sompolski: JEREMY is the PI of the complete grants and JEREMY is joined by Chris Dennis, who is a lead supply chain management instructor at Columbus state Community college.

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Bob Sompolski: And also works on the on the complete grant as well. We'd like to provide you with some of the history of these various projects and our NSF

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Bob Sompolski: centers that we've been working with that address technology training for supply chain technicians. In July of 2016

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Bob Sompolski: the national Center PI, Kevin Fleming, suggested that I attend a supply chain technology conference at Navy Pier in Chicago.

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Bob Sompolski: I recall, it was the summer of the pokemon go phenomenon and the conference buzz was how everybody was trying to place marketing tools upon the pokemon paths to attract game players and paying customers.

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00:01:52.920 --> 00:02:04.920

Bob Sompolski: I visited the conference Expo and I met staff from Columbus state Community college and I was very interested in their logistics engineering technology curriculum that supported the supply chain

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00:02:05.820 --> 00:02:19.020

Bob Sompolski: automation. Ned Young and I, along with Jeremy and Chris submitted NSF proposals to continue that work and how these efforts have interacted with the national centers curriculum is our story that we'd like to share with you.

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00:02:19.620 --> 00:02:28.950

Bob Sompolski: So we're going to ask Columbus state to tell their part of the story, first, so i'll invite Jeremy and Chris to take over at this point. Chris I believe you're going first in the presentation.

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00:02:31.080 --> 00:02:31.860

Chris Dennis: Yes.

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00:02:34.050 --> 00:02:41.310

Chris Dennis: OK, so I will share the screen

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00:02:43.680 --> 00:02:49.350

Chris Dennis: Sharing screen

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00:02:56.940 --> 00:02:58.020

Chris Dennis: OK, I see.

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00:03:00.420 --> 00:03:00.750

Chris Dennis: Okay.

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00:03:02.250 --> 00:03:03.540

Chris Dennis: Thank you very much, Bob.

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00:03:05.100 --> 00:03:21.930

Chris Dennis: So, today I want to talk to you about our logistics engineering technology program at Columbus state Community college. Professor Banta and I will talk about the program as well as how it relates to the COMPLETE grant so.

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00:03:23.250 --> 00:03:42.480

Chris Dennis: What is logistics - that's a question we get asked quite often, and the way we explain logistics to our students is it's the part of the supply chain that plans implements and controls the forward and reverse movement of goods and services through the supply chain.

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00:03:44.070 --> 00:03:46.650

Chris Dennis: Why is logistics important in Columbus.

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Chris Dennis: Well Columbus

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Chris Dennis: is a 10 hour drive a one day drive from 47% of the US population 47% of US manufacturing capacity, as well as 48% of US headquarters of US operations were also that same 10 hour drive from roughly 30% of Canadian manufacturing capacity - that's why

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00:04:15.300 --> 00:04:25.620

Chris Dennis: logistics and supply chain management is very important in central Ohio These are just some of the companies that operate in central Ohio.

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00:04:25.950 --> 00:04:35.520

Chris Dennis: And there are many more that aren't listed here. One, namely Honda, and all the support companies who are the suppliers that support Honda.

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00:04:35.970 --> 00:04:48.870

Chris Dennis: As you can see here the top 15 logistics companies in Columbus employ over 32,000 people and this number keeps growing, this is why this industry is important in central Ohio.

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Chris Dennis: So these companies came to us and they came to us asking for supply chain automation technicians, and we named the program logistics engineering technology.

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Chris Dennis: And because central Ohio is one of the largest and fastest growing supply chain sectors in the country, it accounts for more than 9% of the jobs in central Ohio and the earnings for supply chain automation technician or logistics engineering technician

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00:05:24.210 --> 00:05:36.870

Chris Dennis: are between 50 and \$70,000 a year, even to start. We've seen students start in that range right after getting their two year associate's degree at Columbus state Community college.

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00:05:37.350 --> 00:05:53.400

Chris Dennis: So, with the advice of our local employers, 20 or more, we wanted to prepare students to be supply chain managers engineering technicians, and systems analysts. So what we did,

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00:05:54.420 --> 00:06:05.130

Chris Dennis: using both in person and virtual modes of education we combined our supply chain

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Chris Dennis: classes with IT coursework as well as basic engineering coursework to get these students this experience, before going out into the workforce and getting these students knowledge that the supply chain Program

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00:06:22.890 --> 00:06:34.560

Chris Dennis: wasn't giving before and also we've worked to have a program, a standing program, at the College called MMWS, which is the modern manufacturing work, study.

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00:06:34.920 --> 00:06:50.160

Chris Dennis: And the LET program was added to this model, where some of our students operate in an earn and learn model so that they're able to leave college, with a job offer most of the time, as well as very limited debt.

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00:06:51.930 --> 00:07:02.970

Chris Dennis: The way the course, the way they degree, excuse me operates is in year one, it can be different, depending on if you're in the modern manufacturing work, study or not.

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00:07:03.390 --> 00:07:16.830

Chris Dennis: The normal program will start out in the first year getting the students some basic understandings of supply chain management principles, as well as introduction to some programming.

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00:07:18.030 --> 00:07:26.850

Chris Dennis: And some introduction into systems, industrial and systems engineering so in the first year will hit all three of the different

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00:07:28.260 --> 00:07:49.050

Chris Dennis: disciplines and get the students have basic understanding and get them very interested in the program then during the second year things get more technical they understand and get more detailed where they start learning how to program PLC they learn how to not only

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Chris Dennis: design, but also to troubleshoot basic electric circuits they learn about drawings and schematics as well as warehouse management.

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00:08:00.930 --> 00:08:11.040

Chris Dennis: They take a class that's dedicated to IT, infrastructure, so that they know what companies need in order to operate their complete it network.

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00:08:11.790 --> 00:08:19.770

Chris Dennis: And then it's followed up by, if they weren't in the modern manufacturing work, study program, they they see an internship.

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00:08:20.280 --> 00:08:26.310

Chris Dennis: During their last semester, where they're able to get some work experience and they report back to Professor Banta

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00:08:26.760 --> 00:08:38.010

Chris Dennis: about how they're doing on their internship as well as what projects have they taken and then there's finally in the SEM 2601

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00:08:38.490 --> 00:09:00.660

Chris Dennis: course it's a capstone course where they're offered a four week data analysis program that's meant to test their excel skills as well as to test their analytic skills before they leave the school and they're ready to operate in the workforce.

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00:09:02.010 --> 00:09:10.230

Chris Dennis: So what careers exist in logistics engineering technology or supply chain automation? Well there's a lot more that aren't

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00:09:10.860 --> 00:09:25.770

Chris Dennis: on this sheet, but these are just some of them - logistics engineering technicians or supply chain automation technicians, warehouse distribution Center managers, IT technicians, as well as operations analysts.

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00:09:27.060 --> 00:09:37.620

Chris Dennis: The degrees that we offer in our department, Professor Banta and I, we have some one year certificates international commerce, supply chain management, as well as

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Chris Dennis: two year degrees in supply chain management international commerce which focuses on doing business with overseas companies and also has a foreign language requirement.

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00:09:50.700 --> 00:09:57.600

Chris Dennis: As well as supply chain management and, finally, the new degree that we're here talking about today, logistics engineering technology.

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Chris Dennis: And next is Professor Banta.

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00:10:04.230 --> 00:10:05.100

Jeremy Banta: Thank you, Chris.

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00:10:07.500 --> 00:10:18.750

Jeremy Banta: yeah so before I talk about the current grant COMPLETE it's best to cover a little bit of history First, there are two proceeding grants that actually act as a series.

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00:10:19.530 --> 00:10:25.110

Jeremy Banta: Much like the marvel Cinematic universe it's better if you've seen them in order, although you don't necessarily have to.

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00:10:25.890 --> 00:10:27.390

Jeremy Banta: So our first NSF grant

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Jeremy Banta: established the LET degree program that Chris was just talking about and, as Chris alluded, this was done through a lot of industry feedback and input.

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Jeremy Banta: Once that was established AND looked like it was going really, really well we put in a second proposal and got a grant from THE National Science Foundation to move the LET program into a work, study model.

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Jeremy Banta: Now, that is where the students will actually come to classes for their first year and then get paired up with a partner entity like Honda

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Jeremy Banta: and work part time, go to school part time in their second year/ A very successful program that goes over not only the LET program but also

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00:11:06.570 --> 00:11:14.670

Jeremy Banta: multiple engineering programs and usually winds up with most of those students being hired, full time, after they graduate.

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00:11:15.420 --> 00:11:25.110

Jeremy Banta: And the third grant is this one, COMPLTE, and, hopefully, there will be a fourth grant we have some ideas for some proposals to follow on the third one.

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00:11:26.100 --> 00:11:39.240

Jeremy Banta: So the COMPLETE grant's primary goal is to share what we learned on the previous two grants with others, specifically Sinclair and Oakton, but also through a network, and there are four deliverables on that grant.

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00:11:41.190 --> 00:11:56.850

Jeremy Banta: The first one is led by Columbus state and it revolves around the dissemination of the information from prior grants, as well as what's happening currently. We do this with our partners Oakton and Sinclair as well as through continual outreach locally and at national level events.

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Jeremy Banta: Second deliverable is happening to some extent at all the schools and doesn't really have a lead and it revolves around creating a quote- unquote, network.

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Jeremy Banta: So we had the deliverable identified but initially we weren't completely sure what a network looked like.

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Jeremy Banta: So through some exploration we realized that schools like Ohio State, Ohio university and some other Ohio schools had advisory boards at the College level or at the school level like for the business college.

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00:12:27.090 --> 00:12:35.610

Jeremy Banta: But not for individual programs, so we thought, a network could replicate that, while also ensuring local schools were all on the same page.

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Jeremy Banta: So we formed the Ohio Supply Chain Academic Network (O-SCAN) and our primary goal is to connect the Ohio supply chain management industry with academic partners in both higher ED and K through 12.

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00:12:50.490 --> 00:13:05.700

Jeremy Banta: Here are some of our current partners and, as you can see, we also have what we like to call supply chain adjacent partners like Ohio department of veteran services, Battelle, Columbus Chamber of Commerce, the regional airport authority and Mid-Ohio regional planning Commission.

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Jeremy Banta: We've been in existence for about two years and pre pandemic had some really good local speakers, while also creating some really good partnerships.

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Jeremy Banta: And recently a K 12 partner asked us to work with them for a virtual event connecting K through 12 students with recent college graduates to talk about logistics and supply chain management careers.

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Jeremy Banta: The third deliverable is led by Oakton and revolves around educating faculty. CSCC is looking to replicate some of those programs Oakton has created.

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Jeremy Banta: And the fourth deliverable revolves around prior learning assessment and at Columbus state we've modeled what Sinclair has been doing and continue our work in this area.

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Jeremy Banta: If you have any questions about our programs feel free to reach out to either Chris or I and we'll be happy to chat with you. And now I'll be followed by Ned from Sinclair.

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00:14:04.710 --> 00:14:05.490

Young, Ned: Thank you, Jeremy.

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00:14:06.750 --> 00:14:16.770

Young, Ned: As Bob had mentioned earlier, he and I are at CO-PIs for a national Center grant and we're actually in the 10th year of that grant.

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00:14:17.820 --> 00:14:35.280

Young, Ned: So today, I wanted to, we wanted to talk a little bit about sort of the history of that grant where we came from and where we are today we're going to talk a little bit about a model program that we developed and an E-textbook course called the introduction automated warehouse.

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Young, Ned: So the Center began actually 10 years ago 2011 as the national Center for supply chain technology, education.

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Young, Ned: And it had several people that were involved in that that no longer are one is Kevin Fleming, many of you probably know, Kevin he was our PI.

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Young, Ned: And Vince DeNoto who many of you probably know, he runs a GIS Center now in Kentucky and then Erica Bowles who has since retired and then Bob and me.

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00:15:12.750 --> 00:15:24.030

Young, Ned: We were there from from the beginning, so that was our early first five years, and what we did, one of the things we did was developed a model program we called a model Program.

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Young, Ned: interesting thing about this, this was industry led, we had several meetings across the country and virtually and our industry partners said for a introductory supply chain

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Young, Ned: automation technician, these are the critical skills that that they have so we put these into a program 37 hour Program

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Young, Ned: that gave room, if a college wanted to do it as an AAS degree, they could add the gen-eds and that sort of thing. So you can see it's a very Mechatronics oriented type Program.

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00:16:03.510 --> 00:16:04.260

Young, Ned: So then,

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00:16:05.820 --> 00:16:16.500

Young, Ned: we five years later, in 2016 ask the NSF for five more years of the Center and they granted us.

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00:16:16.950 --> 00:16:23.850

Young, Ned: And we did a little bit of rebranding and we called our Center the national Center for supply chain automation.

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00:16:24.420 --> 00:16:44.550

Young, Ned: Colleen Molko began as our PI - she's since retired and Valerie Piper now is our P. Bob and I are still there hanging on, and then we are fortunate to have Jamie Dale who's a mechatronic expert out of Central Piedmont in Charlotte North Carolina - so that's our core leadership team now.

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Young, Ned: With the onset of the technology changes in automation that both Jeremy and Chris talked about

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00:16:58.830 --> 00:17:13.860

Young, Ned: we thought it was necessary, we talked to the industry partners had several more meetings and they agreed that the changes and enhancements to technology needed to be incorporated into our model program so this year we've

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00:17:14.370 --> 00:17:22.170

Young, Ned: are distributing our new model program with several changes to it and i'd like to kind of go through those changes with you.

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00:17:22.890 --> 00:17:32.970

Young, Ned: The first that are highlighted here in yellow, these are the coursework that really had very little change and we felt and industry felt that these were foundational

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00:17:33.240 --> 00:17:40.560

Young, Ned: to the program. So you can see, these are the kind of common elements, so that stayed from the old program. Then we

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00:17:41.190 --> 00:17:51.540

Young, Ned: realized that there needed to be some changes to current coursework so, for example, our AC & DC courses - those used to be two separate courses.

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00:17:51.960 --> 00:18:00.150

Young, Ned: We felt like those needed to be put together - industry said, you know it's important for students to understand both of those concepts, so we did that, as a single course.

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00:18:01.230 --> 00:18:03.180

Young, Ned: We did some work on the OSHA

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Young, Ned: course as well as well as the PLC adding the variable frequency drives. We also did quite a bit of change to the introduction to the automated warehouse course which Bob going to talk to us here in just just a couple minutes.

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00:18:21.390 --> 00:18:33.870

Young, Ned: So the OSHA - the major change we did with that was we went with the OSHA 30 certification, so that a student who takes that course, then, should be able to sit for that certification.

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00:18:35.070 --> 00:18:39.720

Young, Ned: We added the variable frequency drives to the PLC because so many of the

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Young, Ned: industry partners said that is a critical part now critical element and what a technician works with and does, as I mentioned, we combined to AC DC together.

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00:18:50.520 --> 00:19:02.310

Young, Ned: And then, in the introduction to automated warehouses we added actually new topics, including networking, robotics and cyber security and we're going to talk about each one of those, as well.

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00:19:04.350 --> 00:19:11.490

Young, Ned: So the new courses that we added to the model program include the networking the cyber security, the robotics.

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00:19:12.930 --> 00:19:26.130

Young, Ned: With the combining of some of the other courses and all that that gave us a total of about 42 hours, which is still within the the needs if if a college wants to create an AAS degree out of this.

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00:19:27.480 --> 00:19:37.440

Young, Ned: So let's talk about a little bit about these new courses, the first one being the networking and I think what's important to really point out in this is that

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00:19:38.340 --> 00:19:51.630

Young, Ned: we don't necessarily expect a supply chain automation technician to be an IT expert, but because so much is being driven now in the automated warehouses and distribution centers

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00:19:52.920 --> 00:20:03.450

Young, Ned: on the IT side and the networking is so important for a troubleshooting we really feel like the technician has to have some background and some of the topology's that are being used.

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Young, Ned: Some of the standards like Ethernet, for example, and then because of the IT changes in automation especially things like, AMRs, are very wireless.

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Young, Ned: We feel that the technician has to have some understanding from a troubleshooting standpoint of what wireless technology is.

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Young, Ned: So this next slide gives a outline of the course work. The topics, you can see, cover many of the protocols and topologies and that sort of thing, but again, focused on the troubleshooting and support area of that.

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00:20:43.980 --> 00:20:44.040

Young, Ned: Okay.

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Young, Ned: So the second new course is a course on Internet of Things and cyber security. I think over the 10 years that

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Young, Ned: i've been involved with the Center one of the biggest changes that we've seen in the warehouses and distribution centers as the addition of IoT devices.

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Young, Ned: I mean we're seeing cameras and printers all kinds of HVAC equipment that's IoT oriented.

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Young, Ned: So I think it's important for the technician to understand a little bit about how these IoT devices are installed and how how one would maintain them and troubleshoot them.

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Young, Ned: Now, when you start adding IoT devices, by its very nature you're opening your facilities to the Internet, which opens it up to issues of cyber security. So again, not necessarily

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00:21:45.600 --> 00:22:05.610

Young, Ned: do we want a technician to be a cybersecurity expert, but they do have to understand how the activities and the things that they do to the networks can be issues of cyber security and can cause some some issues. So this is a course outline of that particular course.

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00:22:07.470 --> 00:22:28.260

Young, Ned: And then, finally, we move into robotics I mentioned AMRs is becoming a very important area. I think, over the last probably two years we've gotten as many inquiries and calls about using AMRs in distribution facilities as with anything.

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00:22:29.310 --> 00:22:44.070

Young, Ned: Now within those robotic systems again there's a lot of troubleshooting the different types of hardware and motion control - there's a lot of sensors that are involved in the robotics so we don't necessarily

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00:22:45.000 --> 00:22:53.070

Young, Ned: think that our supply chain automation technicians are going to be experts at programming robotics, but they do have to understand,

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Young, Ned: from the troubleshooting and maintenance standpoint what's necessary. So this is the outline of the course work for the robotics - again focusing on the maintenance and troubleshooting parts of robotics.

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00:23:13.710 --> 00:23:23.280

Young, Ned: Okay, so with that i'm going to turn it over to my partner Bob Sompolski who's going to talk about the E textbook that we have.

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00:23:24.690 --> 00:23:25.800

Bob Sompolski: Okay, well, thank you for that.

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00:23:26.610 --> 00:23:29.340

Bob Sompolski: During our first round of NSF funding,

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Bob Sompolski: the Center identified the need for an entry level class that would survey the skills and equipment that technicians should

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Bob Sompolski: have to be hired for supply chain automation positions. The discussion of the curriculum led to the plans to develop a textbook, which was a collaborative development between the supply chain automation national Center and E-Mate.

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00:23:56.220 --> 00:24:08.130

Bob Sompolski: The development tool was Apple's I-book application, and it was distributed from the iPhone bookstore as well as Google play which distributed a PDF version.

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00:24:09.420 --> 00:24:11.760

Bob Sompolski: There are interactive crossword puzzle

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Bob Sompolski: exercises based upon the jeopardy game, as well as links to a variety of YouTube videos and by 2019 - i'm sorry by 2017 we produced an instructor's manual that provided sample syllabi, textbook solutions

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00:24:29.310 --> 00:24:35.430

Bob Sompolski: and laboratory support for those faculty who were scheduling the course with a lab meeting.

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00:24:41.100 --> 00:24:41.430

Bob Sompolski: Okay.

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00:24:42.750 --> 00:24:56.370

Bob Sompolski: The layout of the current text had three small introductory chapters and a rather large Chapter five that surveyed material handling equipment. Both of those are highlighted in yellow. Here the widgets that are referred to in the table

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00:24:57.090 --> 00:25:00.480

Bob Sompolski: are these interactive exercises that I had mentioned during the last slide.

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Bob Sompolski: The size of the existing Chapter five made it difficult to place the emphasis on robotics that we felt it needed because robotics was playing such a central role in the industry.

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Bob Sompolski: These were designed with the notion of adding more robotics at this point in the text and introductory networking and cybersecurity added later in the text.

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00:25:24.180 --> 00:25:35.070

Bob Sompolski: So the redesign of chapters 1, 2 and 3 essentially compressed them into a new Chapter 1. We updated the career awareness exercises and videos of the first chapter.

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Bob Sompolski: And included the new certified technician supply chain automation credential of the manufacturing skill standard council. Many thanks go to Bruce Dixon of AMATROL who helped us update that part of the material.

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00:25:50.850 --> 00:25:59.460

Bob Sompolski: We also added a widget from the Wisc-Online.com website that provides a broad overview of supply chain management.

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00:26:01.050 --> 00:26:11.130

Bob Sompolski: The first five sections of the current Chapter five will essentially remain the same, they will survey human driven devices and automated storage and retrieval systems

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00:26:11.730 --> 00:26:21.000

Bob Sompolski: that are highlighted in yellow here. The areas highlighted in blue will focus on maintenance processes and the computerized maintenance management software that support them

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00:26:21.420 --> 00:26:34.170

Bob Sompolski: as well as some automated inventory tools and then the new material on robotics will be placed in between them. We're very excited to feature, the work of the Waypoint Robotics team in a separate chapter.

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00:26:35.700 --> 00:26:54.900

Bob Sompolski: The authors, who are helping us with all these efforts include Patty Katsaros and her team from Waypoint Robotics. Their plan is to include a terrific lab exercise based on an external webpage maintained by IRobot - they manufacture those automated vacuums and mopping

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00:26:55.920 --> 00:27:13.860

Bob Sompolski: systems. This will provide entry level users, the ability to connect web based graphical objects together that represent code that can be executed by a virtual screen robot called Root or use a bluetooth connection and download it to a physical robot Root.

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00:27:14.940 --> 00:27:20.940

Bob Sompolski: Code levels allow programmers to move from the graphical drag and drop interface to fully testable code.

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00:27:21.600 --> 00:27:32.340

Bob Sompolski: Michael Gueriche of metropolitan Community college in omaha nebraska is working on the material that will include the use of sensors and computerized maintenance management software

146

00:27:33.060 --> 00:27:37.680

Bob Sompolski: to aid in predictive maintenance. We will note that the use of sensors in this area of the texts

147

00:27:38.100 --> 00:27:51.840

Bob Sompolski: will feature applications, ranging from measurements of wear on devices that indicate need for maintenance, the automation of inventory and the ability for an autonomous vehicle to negotiate its route across a warehouse floor.

148

00:27:53.520 --> 00:28:07.770

Bob Sompolski: A new chapter on networking and Internet of Things was provided by Dr John Sands of moraine valley Community college. John has provided us with lab activities from the Tinkercad suite of pages that are maintained by Autodesk.

149

00:28:08.640 --> 00:28:22.560

Bob Sompolski: Tinkercad was created by Google engineer K. Beckman to make 3D modeling accessible to the general public. For our purposes Tinkercad supports the design of circuits and arduino simulations.

150

00:28:23.340 --> 00:28:31.860

Bob Sompolski: The chapter on cyber security has been provided by John Romero. John is the assistant director of the Texas A&M cyber security Center.

151

00:28:32.430 --> 00:28:42.690

Bob Sompolski: And john has provided a lab activities that features, the famous enigma cipher that was used by German intelligence during World War II. If you've ever seen

152

00:28:43.170 --> 00:28:51.030

Bob Sompolski: the 2014 movie called the Imitation Game, the story of how the cipher was broken by group, headed by Alan Turing.

153

00:28:51.480 --> 00:28:59.730

Bob Sompolski: Displayed in that movie the enigma worked with circular shells that had letters of the alphabet rotating around a cylinder.

154

00:29:00.540 --> 00:29:15.540

Bob Sompolski: John Romero, has provided a version of those cells that wrap around the cylinder of Pringles potato chips container to demonstrate the code. Pringles and enigma are two words that I never thought I'd be using in the same sentence. And John Romero has shown me how.

155

00:29:17.250 --> 00:29:24.480

Bob Sompolski: So the second edition of the text will also consist of chapters that are essentially untouched from the first edition.

156

00:29:24.960 --> 00:29:42.630

Bob Sompolski: Of those highlighted in green are essentially revisions of existing text from the first edition, and those highlighted in blue represent new material. The addition of the new labs and the Web widgets will provide better support for those faculty who adopt the text.

157

00:29:44.610 --> 00:29:50.640

Bob Sompolski: In our first edition of the text we used the Apple I-books author application to create the work. Unfortunately

158

00:29:51.030 --> 00:30:00.210

Bob Sompolski: Apple no longer supports I-book author, although they do continue to support the ebook reader. Consequently we've had to turn to another authoring format

159

00:30:00.750 --> 00:30:10.530

Bob Sompolski: and we'll be using ePub which is readable by a variety of applications, depending upon the operating system that i've displayed here on the slide.

160

00:30:11.460 --> 00:30:16.800

Bob Sompolski: The important part of this is that, after our national Center sunsets the ebook,

161

00:30:17.250 --> 00:30:34.350

Bob Sompolski: publications can be revised with open source tools such as Calibre so that as the technologies described in the book evolve someone can update the book in the future, at no cost. This would not be the case with the I-book or the PDF formats that we're currently using.

162

00:30:36.510 --> 00:30:41.250

Bob Sompolski: So we hope to have a draft of the second edition of the book available by fall.

163

00:30:42.360 --> 00:30:48.360

Bob Sompolski: After that we will continue to support the instructors manual by updating the lab activities for the new chapters,

164

00:30:49.020 --> 00:30:55.800

Bob Sompolski: chapter exercises with solutions and we will modify the sample syllabi that we're currently distributing in the instructors manual.

165

00:30:56.130 --> 00:31:07.740

Bob Sompolski: And this will be the center's attempt to provide the type of support similar to what you find from a typical textbook publisher for faculty who adopt their texts.

166

00:31:08.760 --> 00:31:17.010

Bob Sompolski: That concludes our presentation i'd like to thank you very much for your attention and our team would welcome your questions at this time.