

Career-Technical Assurance Guide (CTAG) Guidance Document (Updated May 15, 2019)

Career-Technical Assurance Guide (CTAG) Technology		Career-Technical Articulation Numbers (CTANs)	Required National/State Accreditation and/or Approval for Adult, Secondary & Higher Education Institutions	EMIS Code	ODE Course	Requirements/Credentials/Licenses Needed to Access College Credit (For most courses, students must matriculate to an institution of higher education within three years of completing the secondary program or within the currency of an industry certification.)		
						Course Grade	End-of-course exam score	Other Requirements
Administrative and Professional Support	Office Procedures	CTAPS001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	142005	Office Management	Successfully complete the course	54 or higher	N/A
	Crop Production	CTAGP001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	010620	Agronomic Systems	Successfully complete the course	50 or higher	N/A
Agribusiness and Production Systems	Soil Fertility and Fertilizers	CTAGP002 (3 Semester)		010610	Greenhouse and Nursery Management	Successfully complete the course	63 or higher	N/A
	Agribusiness Management	CTAGP003 (3 Semester)		010115	Business Management for Agricultural and Environmental Systems	Successfully complete the course	63 or higher	N/A
Air Transportation	Air Transportation	CTAIR001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	177020	Aviation Airport Management	Successfully complete the course	73 or higher	N/A
	Aircraft Ground Operations	CTAIR002 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS. Sending school must be approved by Federal Aviation regulations with Part 147 certification to be eligible to transfer credit to a Part 147 program. Students from sending schools that are not Part 147 certified can only transfer credit to a non-Part 147 certified institution that offers this content.	177014	Aviation Maintenance General	Successfully complete the course	71 or higher	N/A
	Aviation Meteorology	CTAIR003 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	177019	Aviation Meteorology	Successfully complete the course	72 or higher	N/A
	Introduction to Aviation	CTAIR004 (3 Semester)		177013	Aviation	Successfully complete the course	74 or higher	N/A
	Private Pilot Theory	CTAIR005 (3 Semester)		177021	Aviation Pilot Training	Successfully complete the course	N/A	Student must also pass the FAA Private Pilot-Airplane Certificate written exam.
Animal Science and Management	Introduction to Animal Science	CTASM001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	010910	Animal Science and Technology	Successfully complete the course	50 or higher	N/A
Automotive Technology	Introduction to Automotive Service and Repair	CTAUT005 (2 Semester)	Certificate of Affirmation can be used for course submission through CEMS. Evidence of National Automotive Technicians Education Foundation (NATEF) Program Accreditation must also be provided in CEMS.	177000	Ground Transportation Maintenance	Successfully complete the course	N/A	Complete a NATEF accredited program at an approved secondary career-technical center or an adult career-technical center. Pass the ASE/NATEF Student Examination for Maintenance and Light Repair or Automobile Service and Technology.
	Introduction to Medium and Heavy Transportation Equipment Technology	CTAUT006 (2 Semester)		177000*	Ground Transportation Maintenance (*Not all secondary institutions will possess NATEF accreditation to teach this component.)	Successfully complete the course	N/A	Complete a NATEF accredited program at an approved Ohio adult career-technical institution and pass the ASE/NATEF Examination for Medium/Heavy Truck Service and Repair. Secondary students pass the ASE/NATEF Examination for Medium/Heavy Truck Service and Repair and matriculate to an institution of higher education with an approved program.
Basic Police Officer		Currently Under Revision						
Biotechnology for Food, Plant and Animal Science	Biotechnology Principles	CTBTC001 (3 semester)	Certificate of Affirmation can be used for course submission through CEMS.	012010	Animal and Plant Biotechnology	Successfully complete the course	60 or higher	N/A
	Bioinformatics	CTBTC002 (3 Semester)		012025	Bioresearch	Successfully complete the course	48 or higher	N/A
Clinical/Medical Laboratory Technology	Intro to Medical (Clinical) Laboratory Science	CTMLT001 (2-3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	072100	Clinical Laboratory Techniques	Successfully complete the course	65 or higher	N/A
Construction Technology	Plan Reading	CTCON001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	178019	Plan Reading	Successfully complete the course	64 or higher	N/A
	Construction Safety (OSHA 30 Hour Safety)	CTCON002 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS. Institutions are required to ensure that an OSHA certified instructor is teaching the curriculum. Instructor credentials are required with course submission.	178018	Construction Safety and Crew Leadership	Successfully complete the course	64 or higher	Student must also possess a current and valid OSHA 30 hour card in general construction.
	Construction Methods and Materials	CTCON003 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	178001	Carpentry and Masonry Technical Skills	Successfully complete the course	75 or higher	N/A

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Criminal Justice	Introduction to Criminal Justice	CTCJ001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	170911	The American Criminal Justice System	Successfully complete the courses	47 or higher	N/A
				170913	Police Work and Practice in Public Safety		56 or higher	
				170915	Correctional System and Services		60 or higher	
Cybersecurity	Cybersecurity Fundamentals	CTCYBR001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	146010	Cybersecurity Defense and Reinforcement	Successfully complete the course	In Field Testing	The end-of-course exam score will be available in May 2020. Students that complete the course in school year 2019-2020 or after will be required to meet the exam score requirement.
Early Childhood Education	Introduction to Early Childhood Education	CTECE001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	350205	Early Childhood Education Principles	Successfully complete the course	50 or higher	N/A
	Health, Safety and Nutrition	CTECE002 (2 Semester)		350230	Health, Safety and Nutrition	Successfully complete the course	65 or higher	N/A
	Infant and Toddler Curriculum	CTECE003 (3 Semester)		350210	Infant and Toddler Education	Successfully complete the course	57 or higher	N/A
Education	Introduction to Education	CTEDU007 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	350010	Education Principles	Successfully complete the course	68 or higher*	*Exam score represents a combined score of 68 or higher on the end-of-course exam and the required portfolio.
Emergency Medical Services*	Emergency Medical Responder	CTEMS001 (2 Semester)	Institutions must submit evidence that the program is approved at each program level by the appropriate agency (Ohio Department of Public Safety, Division of Emergency Medical Services, and the National Highway Traffic Safety Administration).	N/A	N/A	Successfully complete the course	N/A	Student must possess a current and valid Emergency Medical Responder Certificate.
	Emergency Medical Technician	CTEMS002 (7 Semester)		N/A	N/A	Successfully complete the course	N/A	Student must possess a current and valid Emergency Medical Technician Certificate.
	Advanced Emergency Medical Technician	CTEMS003 (8 Semester)		N/A	N/A	Successfully complete the course	N/A	Student must possess a current and valid Advanced Emergency Medical Technician Certificate.
	Paramedic	CTEMS004 (30 Semester)		N/A	N/A	Successfully complete the course	N/A	Student must possess a current and valid Ohio Paramedic Certificate.
Engineering Technology: Electrical	DC Circuits	CTEET001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	175011	DC and AC Electronic Circuits	Successfully complete the course	61 or higher	Successfully complete DC and AC Electronic Circuits (175011) and earn a score of 61 or higher on the end-of-course exam, or successfully complete Engineering Principles (175002) and earn a score of 48 or higher on the end-of-course exam, and in some cases successfully complete Robotics (175004) and earn a score of 64 or higher on the end-of-course exam, from an approved high school program, OR successfully complete an approved Electronics program at an Ohio Technical Center. Students must also complete the requirement for Algebra at the matriculating institution in order to receive credit for DC Circuits.
				175002	Engineering Principles	Successfully complete the course	48 or higher	
				175004	Robotics	Successfully complete the course	64 or higher	
	Digital Electronics	CTEET002 (4 Semester)	175007	Digital Electronics	Successfully complete the course	56 or higher	N/A	
	Programmable Logic Controls	CTEET003 (3 Semester)	175004	Robotics	Successfully complete the course	64 or higher	Complete Robotics (175004) from an approved secondary career-technical institution and earn a score of 64 or higher on the end-of-course exam, OR successfully complete an approved program at an Ohio Technical Center.	
Engineering Technology: Mechanical	Manufacturing Processes	CTMET004 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	175003	Manufacturing Operations	Successfully complete the course	73 or higher	N/A
	CADD	CTMET005 (3 Semester)		175006	Computer Integrated Manufacturing	Successfully complete the course	60 or higher	N/A
Entrepreneurship	Introduction to Entrepreneurship	CTENTR001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	141030	Strategic Entrepreneurship	Successfully complete the course	56 or higher	N/A
Exercise Science	Introduction to Exercise Science	CTES001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	072000	Exercise and Athletic Training	Successfully complete the course	56 or higher	N/A
	Fitness and Health Foundations	CTES002 (3 Semester)		072020	Fitness Evaluation and Assessment	Successfully complete the course	61 or higher	N/A

\*EMT curricula leading to the various credentials are separate endeavors. That is, the EMT-B curriculum does not replace any portion of the EMT-I or P curriculum. The same is true for the EMT-I curriculum. It does not replace any portion of either the EMT-B or P curriculum. Thus, students holding EMT-B certificates desiring to advance to EMT-I or EMT-P are required to take all portions of the EMT-I or EMT-P curriculum and would earn credits assigned to each curriculum by the college or university. However, the state statute allows medical and program directors to award "previous training credit" for those holding EMT-I certificates who desire to enter an EMT-P training program. As a result, students could earn 30 Semester hours for EMT-P, in addition to 8 Semester hours toward EMT-I.

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Fire Science Technology**	Volunteer Fire Fighter	CTVFF001 (1 Semester)	Institutions must submit evidence that the program is state chartered in each area by the Ohio Department of Public Safety, Division of Emergency Medical Services, or Office of Fire Science.	N/A	N/A	Successfully complete the course	N/A	Current Ohio Volunteer Fire Fighter Certification and completion of Volunteer Fire Fighter training course at an Ohio public institution.
	Fire Fighter I	CTFF002 (7 Semester)		N/A	N/A	Successfully complete the course	N/A	Current Ohio Fire Fighter I Certification; Required NIMS 100 and 700.
	Fire Fighter II	CTFF003 (11 Semester)		N/A	N/A	Successfully complete the course	N/A	Current Ohio Fire Fighter I and II certifications or an Ohio Fire Fighter II Certification; completion of training courses offered by an Ohio public OTC or college/university.
	Fire Safety Inspector	CTFINS001 (3 Semester)		N/A	N/A	Successfully complete the course	N/A	Current Ohio Fire Fighter Certification as a Fire Safety Inspector and employed as a firefighter in Ohio.
	Fire Service Instructor	CTFSI001 (3 Semester)		N/A	N/A	Successfully complete the course	N/A	Current Ohio Fire Fighter Certification as a Fire Service Instructor.
**Credit hours listed for each CTAN for Fire Fighter programs are maximum hours awarded up to each level of training. For example, if a student has successfully completed and earned credit for Volunteer Fire Fighter, four semester credits will be awarded for Fire Fighter I. If a student has successfully completed and earned credit for Fire Fighter I (or Volunteer Fire Fighter and Fire Fighter I), five semester credits will be awarded toward Fire Fighter II.								
Food Science	Introduction to Food Processing	CTFSC001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	011010	Science and Technology of Food	Successfully complete the course	61 or higher	Students must also complete secondary courses in Biology and Chemistry.
Health Information Management	Intro to Health Information Management	CTHIM001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	072135	Health Information Technology	Successfully complete the course	62 or higher	N/A
	Legal and Ethical Aspects of Health Information Management	CTHIM002 (2 Semester)		072140	Health Information Management	Successfully complete the course	57 or higher	N/A
Heating Ventilation Air Conditioning/ Refrigeration (HVAC/R)	Currently Unavailable for submission. CTAG is under review.							
Horticulture	Floral Design and Marketing	CTHOR001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	010625	Floral Design and Marketing	Successfully complete the course	64 or higher	N/A
	Landscape Maintenance	CTHOR002 (3 Semester)		010640	Landscapes Hardscapes	Successfully complete the course	56 or higher	N/A
	Equipment Operation and Maintenance	CTHOR003 (3 Semester)		010615	Landscape Systems Management	Successfully complete the course	64 or higher	N/A
	Plant and Horticulture Science	CTHOR004 (3 Semester)		010155	Plant and Horticulture Science	Successfully complete the course	64 or higher	N/A
	Turf-Grass Management	CTHOR005 (3 Semester)		010635	Turf Science and Management	Successfully complete the course	60 or higher	N/A
Hospitality, Tourism, and Culinary Arts	Sanitation and Safety	CTCF001 (1 Semester)	Institutions must currently offer the ServSafe—National Restaurant Association Program and provide documentation for an instructor who is Certified ServSafe.	N/A	N/A	Successfully complete the course	N/A	The student must hold a current ServSafe Manager Certification offered through the National Restaurant Association to receive credit.
	Introduction to Hospitality and Tourism	CTCF002 (2 Semester)	Certification of Affirmation can be used for course submission through CEMS.	330000	Hospitality Fundamentals	Successfully complete the course	68 or higher	N/A
	Basic Food Production	CTCF005 (3 Semester)	Institutions must hold either American Culinary Federation certification or provide a Certificate of Affirmation through CEMS.	330100	Fundamentals of Food Production	Successfully complete the course	76 or higher	Some colleges may require prerequisite completion of, or concurrent enrollment in, Sanitation and Safety (ServSafe).
	Front Office Operations	CTCF006 (2 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	N/A	N/A	Successfully complete the course	N/A	Secondary institutions should submit for CTCF008, not CTCF006.

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Hospitality, Tourism, and Culinary Arts (continued)	Technology in the Hospitality Industry	CTCF007 (2 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	330035	Hospitality Management	Successfully complete the course	64 or higher	N/A
	Front Office Operations and Housekeeping Operations for the Lodging Industry	CTCF008 (3 Semester)		330030	Front Office Management and Operation	Successfully complete the course	77 or higher	N/A
	Food Principles and Purchasing	CTCF009 (3 Semester)		330120	Restaurant Management	Successfully complete the course	66 or higher	N/A
Industrial Power Technology	Hydraulics and Pneumatics Systems	CTAIE001 (2 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	010225	Hydraulics and Pneumatics	Successfully complete the course	61 or higher	N/A
Interactive Media	2-D Animation	CTIM001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	145115	Animation	Successfully complete the course	55 or higher	N/A
	Raster Graphics	CTIM002 (3 Semester)		145100	Creating and Editing Digital Graphics	Successfully complete the course	55 or higher	N/A
	Vector Graphics	CTIM003 (3 Semester)		145105	Multimedia and Image Management Techniques	Successfully complete the course	60 or higher	N/A
	Internet and Web Languages	CTIM004 (3 Semester)		145010	Web Design	Successfully complete the course	55 or higher	N/A
	Graphical Website Design	CTIM005 (3 Semester)		145125	Interactive Application Development	Successfully complete the course	55 or higher	N/A
	Digital Video Production	CTIM006 (3 Semester)		145110	Video and Sound	Successfully complete the course	60 or higher	N/A
	3-D Modeling and Animation	CTIM007 (3 Semester)		145120	3-D Techniques	Successfully complete the course	55 or higher	N/A
	Electronic Publishing	CTIM008 (3 Semester)		145095	Design Techniques	Successfully complete the course	55 or higher	N/A
Information Support Services/Network Systems	Networking/CompTIA Network +	CTIT002 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS. Institutions may submit for CTIT015 or CTIT006, but not both.	145035	Networking	Successfully complete the course	60 or higher	Meet the requirements for ODE courses 145035 and 145045 OR the student must hold the CompTIA Network + certification, Cisco Certified Network Associate, Cisco Certified Entry Networking Technician certification, or passed Cisco I and II semester tests.
				145045	Network Management	Successfully complete the course	50 or higher	
	Introduction to Desktop Operating Systems	CTIT005 (3 Semester)		145030	Computer Software	Successfully complete the course	60 or higher	N/A
	Introduction to User Support	CTIT006 (3 Semester)		145050	Network Security	Successfully complete the course	55 or higher	Meet the requirements for ODE course 145050 OR the student must hold the current Microsoft Enterprise Desktop Support Technician credential.
	CompTIA Security +	CTIT015 (3 Semester)		145050	Network Security	Successfully complete the course	55 or higher	Meet the requirements for ODE course 145050 OR the student must hold the CompTIA Security + certification.

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Information Support Services/Network Systems (continued)	Cisco I: CCNA-1 Introduction to Networks	CTIT007 (3 Semester)	Until valid WebXam score are received, this CTAN will require a full submission and faculty panel review for approval.	N/A	N/A	Successfully complete the course	N/A	Successfully complete the CISCO course and pass applicable semester tests in Cisco I/II curriculum OR hold current Cisco certification (CCNA certificate, CCENT certificate).	
	Cisco II: CCNA-2 Routing and Switching Essentials	CTIT008 (3 Semester)	The institution must submit evidence that it is offering an approved CISCO curriculum.	N/A	N/A	Successfully complete the course	N/A		
	Cisco III: CCNA-3 Scaling Networks	CTIT009 (3 Semester)		N/A	N/A	Successfully complete the course	N/A		Successfully complete the CISCO course and pass applicable semester tests in Cisco III/IV curriculum OR hold current Cisco certification (CCNA certificate).
	Cisco IV: CCNA-4 Connecting Networks	CTIT010 (3 Semester)		N/A	N/A	Successfully complete the course	N/A		
	Microsoft Windows Desktop Operating System	CTIT011 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS. Institutions may submit for CTIT013 or CTIT016, but not both.	145030	Computer Software	Successfully complete the courses	60 or higher	Meet the requirements for ODE courses 145030 and 145040 OR hold current Microsoft Client Operating System certification.	
				145040	Network Operating Systems		55 or higher		
	Microsoft Server Administrator	CTIT013 (3 Semester)		145040	Network Operating Systems	Successfully complete the course	55 or higher	Meet the requirements for ODE course 145040 OR hold current Microsoft Server Certification.	
	Linux	CTIT016 (3 Semester)		145040	Network Operating Systems	Successfully complete the course	55 or higher	Meet the requirements for ODE course 145040 OR hold one of the following current certifications: CompTIA Linux +, Linux Professional Institute Junior Exam, Red Hat Certified System Admin, or Novell Certified Linux Administration.	
145030				Computer Software	Successfully complete the courses	60 or higher	Meet the requirements for ODE courses 145030 and 145025 OR hold the current CompTIA + certificate.		
Operating System, Hardware Operation and Maintenance/A+	CTIT014 (3 Semester)	145025		Computer Hardware		55 or higher			
		Intro to Digital Media Arts and Media Design		CTMDA001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	340325	Digital Media Arts	Successfully complete the course	49 or higher
Intro to Audio Production	CTMDA002 (3 Semester)	340130		Audio Broadcasting		Successfully complete the course	77 or higher	N/A	
Intro to Single Camera Video Production	CTMDA003 (3 Semester)	340145	Video Production	Successfully complete the course		59 or higher	N/A		
Multi-Media Production for the Web	CTMDA004 (3 Semester)	340160	Multi-Media Web Production	Successfully complete the course		53 or higher	N/A		
Medical Assisting	Basic Administrative Functions	CTMAT004 (1 Semester)	Institutions must submit evidence that Ohio Department of Education approved programs are accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) or programs with documentation from the American Medical Technologist that completers are eligible for the RMA examination.	N/A	N/A	Successfully complete the course	N/A	Certified Medical Assistant by the Certifying Board of the American Association of Medical Assistants (CMA-AAMA) or a Registered Medical Assistant by the American Medical Technologists (RMA-AMT).	
	Perform Bookkeeping Functions	CTMAT005 (2 Semester)		N/A	N/A	Successfully complete the course	N/A		
	Process Insurance Claims	CTMAT006 (3 Semester)		N/A	N/A	Successfully complete the course	N/A		
	Fundamental Procedures	CTMAT008 (3 Semester)		N/A	N/A	Successfully complete the course	N/A		
	Specimen Collection	CTMAT009 (2 Semester)		N/A	N/A	Successfully complete the course	N/A		
	Diagnostic Testing	CTMAT010 (2 Semester)		N/A	N/A	Successfully complete the course	N/A		
	Patient Care	CTMAT011 (5 Semester)		N/A	N/A	Successfully complete the course	N/A		
Medical Management and Support	Medical Office Procedures	CTMMS001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	142015	Medical Office Management	Successfully complete the course	67 or higher	N/A	

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Medical Terminology	Medical Terminology	CTMT001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	072150	Medical Terminology	Successfully complete the course	61 or higher	N/A
Natural Resource Management	Environmental Science	CTNRM001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	010720	Environmental Science for Agriculture and Natural Resources	Successfully complete the course	59 or higher	N/A
	Field Botany	CTNRM002 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	010710	Natural Resources	Successfully complete the course	68 or higher	N/A
	Field Zoology	CTNRM003 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	010745	Wildlife and Fisheries	Successfully complete the course	65 or higher	N/A
Nursing	Practical Nursing	CTPNNUR001 (30% of Nursing Technical Credit in the Associate Nursing Program)	Institutions must submit evidence that the program is an Ohio Board of Nursing approved PN program.	N/A	N/A	Successfully complete the course	N/A	The applicant must provide proof to the receiving institution that they hold a current license to practice as a Licensed Practical/Vocational Nurse. The applicant must provide proof to the receiving institution that they have completed a pre-licensure practical nurse (PN) education program approved by the Ohio Department of Education and the Ohio Board of Nursing.
OSHA Safety	10 Hour Safety	CTS001 (1 Semester)	Institution must submit evidence that it is offering an approved OSHA 10 Hour curriculum.	N/A	N/A	Successfully complete the course	N/A	Current and valid OSHA 10 Hour Safety Card.
Performing Arts	Stagecraft	CTPAT001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	340250	Stagecraft	Successfully complete the course	66 or higher	N/A
	Dance Performance Practicum	CTPAT002 (1-3 Semester)		340220	Choreography	Successfully complete the course	68 or higher	N/A
Personal Finance	Personal Finance	CTPF001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	091052	Personal Financial Management	Successfully complete the course	55 or higher	N/A
Pharmacy Technician	Introduction to Pharmacy Technician	CTPT001 (5 Semester)	Pharmacy program must contain 350 clock hours of instruction.	N/A	N/A	Successfully complete the course	N/A	CTPT001 must contain at least 75 hours. Current and valid Pharmacy Technician Certification Board (PTCB) Certification is required.
	Pharmacy Concepts	CTPT002 (5 Semester)		N/A	N/A	Successfully complete the course	N/A	CTPT002 must contain at least 75 hours. Current and valid Pharmacy Technician Certification Board (PTCB) Certification is required.
	Pharmacy Laboratory/Clinical Experience	CTPT003 (3 Semester)		N/A	N/A	Successfully complete the course	N/A	CTCP003 must provide at least 225 clock hours of psychomotor experiences. Current and valid Pharmacy Technician Certification Board (PTCB) Certification is required.
Phlebotomy		CTP001 (3 Semester)	See column I for requirements.	N/A	N/A	Successfully complete the course	N/A	The American Society for Clinical Pathology (ASCP) phlebotomy credential is required. Eligibility for this credential is high school diploma and completion of a program approved by the National Accreditation Agency for Clinical Lab Sciences or high school diploma and completion of a course with 40 hours of didactic and 100 hours of clinical training. Based on ASCP requirements students must have "a minimum of 100 successful unaided blood collections including venipuncture's and skin punctures."

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Programming	Computer Logic	CTPROG001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	145060	Programming	Successfully complete the course	55 or higher	N/A
	Java Programming	CTPROG002 (3 Semester)		145065	Object Oriented Programming	Successfully complete the course	55 or higher	N/A
	C++ Programming	CTPROG003 (3 Semester)		145065	Object Oriented Programming	Successfully complete the course	55 or higher	N/A
	Microsoft .Net Fundamentals	CTIT012 (3 Semester)		145070	Visual Programming	Successfully complete the course	50 or higher	Students must meet the requirements for ODE course 145070 or proof of successful completion of the MTA Exam 98-372 or current equivalent.
Renewable Energy	Introduction to Alternative and Renewable Energy	CTAE001/ORE001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS. Secondary institution must choose to submit for one of these CTANs, but not both.	010715	Energy Systems Management	Successfully complete the course	68 or higher	N/A
	Wind Energy	CTAE002/ORE005 (3 Semester)		010717	Solar and Wind Energy	Successfully complete the course	52 or higher	N/A
	Solar Photovoltaic	CTSP001/ORE003 (3 Semester)		010717	Solar and Wind Energy	Successfully complete the course	52 or higher	Students will not receive credit for the CTAN until they have completed the prerequisite requirement for College Algebra.
Supply Chain Management	Introduction to Supply Chain Management Technology	CTSCM001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	142025	Supply Chain Management Technology	Successfully complete the course	73 or higher	N/A
	Logistics and Transportation	CTSCM002 (3 Semester)		142030	Logistics Management	Successfully complete the course	65 or higher	N/A
	Purchasing, Sourcing, and Supplier Management	CTSCM003 (3 Semester)		142020	Operations Management	Successfully complete the course	60 or higher	N/A
Visual Design and Imaging	Design and Typography Fundamentals	CTVDI001 (3 Semester)	Certificate of Affirmation can be used for course submission through CEMS.	340320	Digital Print Design	Successfully complete the course	49 or higher	N/A
				OR				
	Fundamentals of Advertising and Communication	CTVDI002 (3 Semester)		340315	Visual Creation	Successfully complete the course	52 or higher	N/A
				340340	Advertising and Communications	Successfully complete the course	44 or higher	
				340120	Digital Image Editing	Successfully complete the course	44 or higher	
Fundamentals of Illustration and Layout	CTVDI004 (3 Semester)	340330	Visual Distribution	Successfully complete the course	38 or higher	N/A		
Welding	Currently unavailable for submission. CTAG is under review.							