Burlington County Institute of Technology
Westampton Campus

CAREER MAJOR PROGRAMS

Course Title: Printing/Graphics Communication

Curriculum Area: CTE

Credits: 5

Board Approved: June 22, 2017

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Printing/Graphic Communications Curriculum

I. Course of Study:

Grade 9
Introduction to Print I (fall)
Introduction to Print II (spring)

Grade 10
Bitmap Application (fall)
Press Application I (fall)
Screen printing I (spring)

Grade 11
Vector Graphics (fall)
Sign Making (spring)
Press application II (spring)

Grade 12
Press application III, Press Application IV
Estimating (fall)
Advanced Screen Production automatic (spring)

II. Program Descriptor:

   Printing/Graphic Communications is a multi-level program designed for students interested in pursuing careers in the Graphic Arts and production areas. These areas are not limited to printing only businesses, rather multiple opportunities which include in-plant, on-site providers and other adjunct imaging and file creation businesses. The course includes extensive knowledge both in theory and practical application about the printing industry for users in the business and manufacturing settings.
This program will incorporate community experiences when age appropriate and available. (Live Job)

Program Outcomes:

   Graduates of the Printing/Graphic Communications program will possess the skills and competencies required for entry level employment, as well as, a foundation for pursuing post-secondary education. Upon satisfactory completion of the course and passing of the NOCTI Certification Test (SOCAT) students should be able to obtain and hold an entry level position in the Printing/Graphic Communication field.

   Students are also eligible to obtain college credit from RCBC for courses completed at the BCIT Campus in the Printing/Graphic Communications programs. At present the agreement is for 12 credits for various classes which may/may not be useful in the procurement of an Associate's Degree from RCBC.

Course Descriptions:

A. Introduction to Printing I & II, Desktop Publishing (DTP) (9th)

This course provides a comprehensive orientation to Printing and its uses in business and other various areas of endeavor. This will include general safety, history, career availability, measurement and their importance to the industry as it functions now. Additionally there will be an Intro to Desktop Publishing (DTP). This includes but is not limited to the creation of files to complete printing jobs of all types including offset press, embroidery, laser imaging, sign making and screen printing

B. Press Applications I, II & III (10th-12th)

Printing presses are becoming progressively more automated, printing press operators are needed to prepare the press for each job, operate it during the printing process and maintain it between uses. These courses provide instruction in the use of various models of offset printing press and the operation of them to provide products for multiple uses within the industry. Repair and maintenance are also taught in this extensive program as many of our students are employed as repair people in the field.

C. Bitmap Editing (10th)

This introductory course instructs the student in the use of bitmap editing software. The software is designed to modify and graphic constructed of pixels. It is the mainstay for the modification of photographs in the printing industry. This course will include resizing of existing graphics, modification of color, construction of new graphics from multiple existing graphics and subsequent sizing to use in printed jobs.

D. Vector Graphics (11th)

This course will instruct the student on the use of vector graphics software. The software is utilized to create the graphics utilized in many processes in the printing industry. Most notably in screen printing and sign making these graphics are able to be resized when properly constructed and can be used from everything from a button to the side of the building. File format and changes for graphic use in other software is common and instructed in this course.

E. Screen Printing I (10th)

This portion of the curriculum will be taught based on present levels of industry related technology. It will include a brief description of the history of screen printing from its origins in early China and Japan to present day use of this process for all forms of sign making, garment and apparel imaging ranging from single color T-shirts to full color images. The introductory course will go through proper use and setup of electronic files printing of positives, screen making, press setup on a manual screen printing press, and subsequent curing of images.

F. Screen Printing II (12th)

The advanced course will take those skills to the next level in the operation of automated screen printing presses available in our industry and in our shop, additional advances in screen making will be introduced and utilized.

G. Printing Estimating (12th)

The primary responsibility of the Print Estimator is to develop cost estimates on routine and complex jobs as required by customer's request, to assist Sales/Purchasing/Management in the custom manufacturing of clients print work. The ideal individual will be an integral part of workflow, has an awareness of unrelated activities, and must be able to interact and successfully complete projects. This portion of the curriculum seeks to make the student knowledgeable of the vast number of needs in even the simplest of jobs.

 Students may have the opportunity to gain practical experience by estimating and producing live jobs brought into the shop as part of the program.

Unit: Safety   Length: Woven throughout units

Proficiencies/Standards	Essential Questions	Content:	Skills:	Assessments:
9.1.12.B.1 9.3.MN- HSE.1-7 CRP1-12	Why is safety Important? How can we stay safe on the job?	Discourse will instruct the student on shop safety and the use of PPE's. Students will understand the use of SDS and how they protect the user from chemical contaminants. Students will know and understand the use of PPE. Follow proper safety procedures when operating equipment Follow approved shop dress code for safe operation	Identify location(s) of fire safety equipment Describe proper use of fire safety equipment List safety rule involving flammable liquids List the steps to be taken in case of injury in the lab Identify location(s) of first aid kit(s) and eye wash station(s) SDS-Read and comprehend Safety Data Sheets Identify protective safety equipment where needed (gloves, goggles, ear plugs) including necessary personal safety equipment Pass general lab safety test Pass safety rest in individual specialty area(s) Use approved methods to dispose of waste materials Read, comprehend and	Students participation in class activities and discussions Students behavior and attitude Demonstrations will be administered to determine the mastery of skills Test/Quiz/Skills

			follow instructions on warning labels	
			Demonstrate common sense when working with others	
			Demonstrate a working knowledge of the safety color code	

Unit: Introduction to Print I/Introduction to Print II - DTP   Length: 1.5 Semesters (9th Grade)

Proficiencies/Standards	Essential Questions	Content:	Skills:	Assessments:
9.3.12.AR-PRT.2 8.1.12.D.1-5 8.1.12.D.1 WHST.9-10.6 8.1.12.A.2 RST.9-10.3 8.1.12.D.1 8.1.12.D.3 8.1.12.E.2 RST.9-10.3 NJSLS Math: A.CED.A.3 7.RP.A.1 7.RP.A.2	How are Graphics and their use in our communication centric world accomplished? What are the major printing processes? What can printers design?	Discourse will instruct the student on the use of Desktop Publishing software to create images for use in the shop environment. Identify the 5 major printing processes Electronic Imaging Desktop Publishing Identify the various kinds of items that can be designed and produced using desktop publishing Identify equipment used for Desktop Publishing	Define the role of graphics in the free enterprise system Define the role of graphics in the free enterprise system Identify printing markets and types of printing businesses List printing's ranking among other industries Identify the products produced by each major process Identify major occupations in	Students participation in class activities and discussions Students behavior and attitude Demonstrations will be administered to determine the mastery of skills Test/Quiz/Skills Setup file for DTP Store file on Network Identify and install fonts as needed

7.RP.A.3 6.RP.A.3d CRP1-12		Copyright Law application & use Design Basics Print Drivers application & use Basic Math and Measurement Practices Basic measurement in liquids and area Basic Points and Pica Measurement	the graphic arts List the major responsibilities for each occupation Identify basic salary/wage expectation ranges for local area Choose type using correct size and format Identify the various kinds of items that can be designed and produced using desktop publishing Demonstrate a keyboard typing proficiency of 20 to 30 WPM Organize a file management system for opening, copying, saving, and deleting files Demonstrate file management operations for opening, copying, saving and deleting files Logon/boot up and print out a page layout and demonstrate a functional knowledge of computer commands/codes/menus/palette for the software in use Set text with appropriate margins, formatting, gutters, leading, headings.	Business card set up and production Memo Pad setup and production Explain and Identify copyright infringement.

			Flow copy from word processing program to page layout program according to job specifications	
			Search and evaluate usability of online graphics	
			Access the use of art for usability as non-copy written material.	
			Utilize royalty free artwork in the production of finished products	
			Installing and using Fonts and the laws connected with such use	
			Create and demonstrate a file management system for opening, copying, saving and deleting files	
			Prepare hand drawn thumbnails for customer review of design direction and intent	
			Prepare a series of hand drawn sketches for layouts incorporating appropriate marks (ie: gutters, register marks, fold lines, etc...)	

			Prepare a dummy for a multipage signature	
			Select and install the correct driver for printing production	
			Identify the various kinds of items that can be designed and produced using desktop publishing	
			Identify the basic principles of design (ie: unity, contrast, page proportions, balance, etc...)	
			Incorporate the basic design principles in hand drawn sketches and measured layouts	
			Draw a design appropriate for a given job using a graphics program	
			Create a design using tints, fills and paint for a given job using a graphics program	
			Create a design using manipulated type (rotated, circled, extended, etc.) for a publication	
			Create a design/publication using electronic clip art	
			Assess the driver used for the print device and how it will affect the final production of	

			the product	
			Multiple driver use on common equipment	
			Review files for processing discrepancies and modify for correct production values.	
			Solve addition of whole number problems-2 & 3 digits	
			Solve addition of fraction problems	
			Solve addition of decimal problems -2 & 3 digits	
			Solve subtraction of whole number problems-2 & 3 digits	
			Solve subtraction of fraction problems	
			Solve subtraction of decimal problems-2 & 3 digits	
			Solve multiplication of whole number problems-2 & 3 digits	
			Solve multiplication of fraction problems	
			Solve multiplication of decimal problems-2 & 3 digits	
			Solve division of whole number problems-2 & 3 digits	

			Solve division of fraction problems	
			Solve division of decimal; [problems-2 & 3 digits	
			Solve fraction to decimal conversion problems	
			Solve decimal to fraction conversion problems	
			Solve decimals to percent conversion problems	
			Solve percent to decimals conversion problems	
			Solve basic ratio and proportion problems	
			Solve basic linear measurement problems	
			Solve basic type calculation problems	
			Solve basic liquid measurement problems	
			Solve basic paper cutting calculations	
			Solve basic points and picas measurement problems	
			Solve inches to picas conversion problems	

			Solve picas to inches conversion problems
			Solve inches to points conversion problems
			Solve points to inches conversion problems
			Solve cost calculating problems

Grade 9   Bindery I Length: 1 Semester

Proficiencies/Standards	Essential Questions	Content:	Skills:	Assessments:
9.3.12.AR-PRT.3 9.3.MN-HSE.1-7 RST.9-10.3 9.3.12.AR-PRT.3 9.3.MN-HSE.1-7 CRP1-12	What is the use of the bindery equipment and how does it enhance the products made in the printing trades? What is the advantage of using programmable	Paper Cutters Identify operational and safety parts Make accurate paper cuts using a mechanized paper cutter Padding Stitchers & Collators Drilling Equipment	Paper cutter Calculate basic paper cuts from stock sheets Identify basic paper types, weights, grades and classifications used in the printing industry Describe how to use and set up programmable cutters	Students participation in class activities and discussions Students behavior and attitude Demonstrations will be administered to determine the mastery of skills Test/Quiz/Skills Special safety for cutters

	cutters? When do we use embossing?	Identify various machinery for the drilling of products Assess and modify equipment for the drilling of various substrates Folders Identify basic folds for printed products Identify equipment used for the folding of various paper substrates. Identify implements used to modify folding machines Die cutting and Embossing Identify die cut products Describe the basic procedure for die cutting. Identify the need to use die cutting in a given job Miscellaneous Bindery methods Identify spiral binding and wire binding equipment and products	Describe the proper maintenance procedures for programmable cutters Describe how to change the blade on an automatic paper cutter Identify padding equipment and hand tools used with them Produce correctly made pads of paper on varied equipment Identify stitching and collating equipment and the various differences in them Produce side and saddle stitched/stapled products Remove and reinstall drill bits for the size required Set up and drill 3 ring notebook pages Differentiate between air and friction fed machinery IMake a single fold using an automatic folding machine	Layout configuration for cutting Ruling out a printed job Cutting a ruled job Maintaining cutter Setup and use of stitcher Using a folder to complete a folded job Setup and use of drill Identify the use of hot stamping, embossing and die cutting

			Use folding equipment to produce a gate fold Use folding equipment to produce an accordion fold Use folding equipment to produce a double parallel folded job Perform preventive maintenance Create a dyeline file for the die maker to use in creating dies for a given job Identify the need to use embossing in a given job List the operations procedures of embossing Identify embossing equipment List the common problems encountered in embossing Describe tipping in procedures Describe and identify U-V coatings List the advantages and disadvantages of U-V coatings	

			Describe and identify in-line finishing systems	

Unit: Press Application I   Length: 1 Semester

Proficiencies/Standards	Essential Questions	Content:	Skills:	Assessments:
9.3.12.AR-PRT.1-3 8.2.12.D.5 CRP1-12	How does use of this equipment expedite the printing process? What are press systems? What is quality assurance?	Setup and Operations of a single color offset printing press. Press operations Identify the major and minor systems of the press Identify different feeding systems Identify different delivery, drying and dampening systems Identify the hand tools used in press operations	Identify basic offset duplicator parts and operations Identify basic safety and operation procedures for an offset duplicator for single color printing Describe the operational procedures for each of the controls and adjustments on the press Perform basic setup for printing a single color job Produce a printed single color job using an offset duplicator	Students participation in class activities and discussions Students behavior and attitude Demonstrations will be administered to determine the mastery of skills Test/Quiz/Skills Basic press parts Printing systems identification Setup of Feeder Registration Printing Inking Delivery

		Identify basic parts and systems of a press	Read and comprehend production information from job ticket/jacket	Cylinder systems
			Identify safety considerations for press operations	
			Practice safe work habits on duplicator operations	
			Perform daily cleanup and maintenance Perform major cleanup and roller treatment	
			Make needed pressure settings on a press	
			Install and set blanket on a press	
			Identify basic press operation procedure	
			Measure volume for mixing chemicals pressroom operations	
			Describe the major systems of a web press	
			List the advantages and disadvantages of a web press	
			Describe the major systems of a Flexographic press	
			List the advantages and disadvantages of a	

			Flexographic press	
RL.11-12.4		Identify, define and utilize all technical terms and vocabulary in the Printing/Graphic Communications Program	Interpret materials found in technical manuals and trade journals	
			Formulate relationships between vocabulary and actual parts of equipment and materials	
		Related Academic Skills & Communications	Put all necessary steps into sequential order	
RST.9-10.3			Sequentially list underlying principles and methods of controlling work in progress	
			Proofread all copy to eliminate errors	
		Describe relationship between quality assurance and manufacturing process	Write factual reports	
			Write descriptive reports	
			Demonstrate computer literacy	
			Develop computer skills consistent with material taught	
			Develop computer skills pertinent to trade	

| | | | requirements | |
| | | | Apply methods to incorporate prior knowledge and test taking skills | |

Grade 10 Unit: Press Application 2   Length: 1 Semester

Proficiencies/Standards	Essential Questions	Content:	Skills:	Assessments:
9.3.12.AR-PRT.1-3 8.2.12.D.5 CRP1-12	How does use of this equipment expedite the printing process? What are press operations? What is the process for proofreading?	Setup and Operations of multicolor offset printing press. Press operations Identify offset duplicator parts and operations Identify safety and operation procedures for an offset duplicator for single color printing Identify the systems of the press as they relate to multi-color operations	Describe the operational procedures for each of the controls and adjustments on the press Identify feeding system requirements for the use of the registration systems Through the use of computer aided plate setting verify the proper separation of the colors being printed. Perform setup for printing a 2 color job Produce a printed 2 color job using an offset duplicator Read and comprehend production information from	Students participation in class activities and discussions Students behavior and attitude Demonstrations will be administered to determine the mastery of skills Test/Quiz/Skills Utilizing registration for multicolor jobs Accurately checking registration Double bump method Proofreading marks Steps to 2 color setup Set up of T-51 color head

			job ticket/jacket	Setup of multi tower press
		Identify safety considerations for press operations	Practice safe work habits on duplicator operations	
			Perform daily cleanup and maintenance	
			Perform major cleanup and roller treatment Make needed pressure settings on a press	
W.11-12.2			Install and set blanket on a press	
			Identify press operation procedure as they relate to the multicolor press operation	
			Interpret materials found in technical manuals and trade journals	
			Formulate relationships between vocabulary and actual parts of equipment and materials	
		Related Academic Skills & Communications	Put all necessary steps into sequential order	
			Sequentially list underlying principles and methods of	

			controlling work in progress	
			Describe relationship between quality assurance and manufacturing process	
			Proofread all copy to eliminate errors	
			Write factual reports	
			Write descriptive reports	
			Demonstrate computer literacy	
			Develop computer skills consistent with material taught	
			Develop computer skills pertinent to trade requirements	
			Apply methods to incorporate prior knowledge and test taking skills	

Grade 10 Bitmap Application   Length: 1 Semester

Proficiencies/Standards	Essential Questions	Content:	Skills:	Assessments:

9.3.12.AR-PRT.1-3
8.1.12.D.1-5
8.1.12.F.1
CRP1-12
	Does the modification of photos enhance the salability of our product?
	
	What are principles of design?
	
	What is the best Photoshop tool to use?
		Computer basics
		
		Identify the basic principles of design
		
		Identify scanner hardware and its basic components and operations
		
		Scanner
		
		Basic Pixel Selection
			Read and comprehend production information on a job jacket/ticket
			
			Log-on/boot up and print out a page layout and demonstrate a functional knowledge of computer commands/codes/menus/palette for the software in use
			
			Demonstrate appropriate scanner/program operations for Grayscale Continuous Tone Copy
			
			Demonstrate appropriate scanner/program operations for Black and White Copy
			
			Demonstrate appropriate scanner/program operations for Color Continuous Tone Copy
			
			Select the pixel structure of a scanned image using the Marquee tool
			
			Select the pixel structure of a scanned image using the Lasso
				Students participation in class activities and discussions
				
				Students behavior and attitude
				
				Demonstrations will be administered to determine the mastery of skills
				
				Test/Quiz/Skills
				
				Acquiring images
				  Internet
				  Scanning
				  Electronic media
				
				Image resolution
				
				Color theory in use
				
				Color types
				  Reflective/Subtractive
				  Transmission/Additive
				
				Selections
				
				Color changes
				
				Compositing photos
				
				Layer use
				
				Exporting files and their uses

			Select the pixel structure of a scanned image using the Magic Wand	
			Select the pixel structure of a scanned image using the Marquee	
			Adjust the tonal range of a photo	
			Adjust gradation of a photo	
			Adjust for color shift	
		Adjustments		
			Save files in formats to be used within the printing industry.	
		File manipulation and storage	Organize a file management system for opening, copying, saving, and deleting files	
			Select and install the correct driver	
			Review files for processing discrepancies	
			Maintain equipment used for this process	

Grade 11: Vector Graphics Application   Length: 1 Semester

Proficiencies/Standards	Essential Questions	Content:	Skills:	Assessments:

9.3.12.AR- PRT.1-3
8.1.12.D.1-5
8.1.12.F.1
 	
NJSLS Math:
7.G.A.1
G.MG.A.1
 	
CRP1-12
	What is the use of vector graphics in the printing industry?
	
	When do we use vector graphics?
	
	How do we use color space?
		Computer basics
		
		Vector basics
			Read and comprehend production information on a job jacket/ticket
			
			Identify the basic principles of design
			
			Log-on/boot up and print out a page layout and demonstrate a functional knowledge of computer commands/codes/menus/palette for the software in use
			
			Define vector graphic and what it is used for.
			
			Create new files appropriate for the use intended
			
			Create objects for use in the vector graphics software environment including-
			  Rectangles
			  Circles
			  Lines
			  Arrows
			
			Manipulate the nodes that objects re-created from to fit the needs of the job
			
			Combine objects to create new shapes per the job
				Students participation in class activities and discussions
				
				Students behavior and attitude
				
				Demonstrations will be administered to determine the mastery of skills
				
				Test/Quiz/Skills
				
				Creating files and saving differing file types
				
				Object oriented construction
				
				Grouping objects
				
				Using blends in your objects
				
				Handles and changing your objects
				
				Creating swatches and color types

			requirements	
			Place and embed photos and other vector files to create the finished art required.	
			Using the correct color space in any instance	
			CMYK RGB LAB Spot color	
			Creating spot color pallets for use in other files	
			Using gradients for coloring objects	
			Creating trapping for use in printed products	
			Creating files for printing and cutting	
			Creating large format files for printing	
			Creating short run files for printing in plotter cutters	
		Finished art use	Size art to fit requirements	
			Export files in a format that	

			fits the needs of the job	
			Give examples of the need to export files in differing formats	

Grade 11: Sign Making   Length: 1 Semester

Proficiencies/Standards	Essential Questions	Content:	Skills:	Assessments:

9.3.12.AR-PRT.1-3
8.1.12.D.1-5
8.1.12.F.1
8.2.12.D.5
CRP1-12
	How does the size of a graphics output effect how it is produced?
	
	How do I find the appropriate materials for a job?
	
	Why is large format output important?
		Large format Image production Software
		Large Format Cutter
		Installation of cut materials
			Setup and production of large format products
			
			Setup of plotter
			
			Identify and use appropriate materials for the production of a job
			
			Research and evaluate the appropriate materials for the plotter in a particular production instance
			
			Research and evaluate appropriate equipment for the production of large format items
			
			Define the role of large format output in the printing industry
			
			Define the various output devices that might be utilized.
			
			Research and evaluate the appropriate software for the plotter.
				Students participation in class activities and discussions
				
				Students behavior and attitude
				
				Demonstrations will be administered to determine the mastery of skills
				
				Test/Quiz/Skills
				
				Plotter setup
				  Cutter setup
				  Printing setup
				
				Identifying various substrates and their uses
				
				Printing on various substrates
				
				Application to substrates of cut and printed materials
				
				Application to outdoor surfaces
				
				Cold weather applications
				
				Warm weather applications
				
				Cost estimation of installed jobs

			Define the role of software in the operation of plotter.	
			Define the methods for printing to a large format output device	
			Install all necessary drivers for the plotter	
			Define the intake requirements for a design file to be printed on large format	
			Research and implement access for the large format environment	
			Define a RIP and what it's job is	
			Importing files into the RIP environment	
			Diagnosing problems within the RIP environment	
			Define the materials used for the Cutter and how they are utilized:	
			IE: Heat Transfer Material Vinyl (Cast Coated) ESM materials	
			Show comprehension of setup of the material being cut	

			Evaluate oral/written material giving direction for the material used	
			Weed scrap as the job requirements dictate	
			Read and comprehend production information on a job jacket/ticket	
			Follow proper safety procedures when operating equipment	
			Evaluate the materials given to verify viability for installation on the substrate	
			Properly clean substrate avoiding damage	
			Setup for installation of cut materials	
			Straight-Centered-Positioned as per the job jacket	
			Use any materials for installation necessary	
			Fully clean and dispose of any materials used for the installation in compliance with all SDS	

Unit: Screen Printing I   Length: 1 Semester

Proficiencies/Standards	Essential Questions	Content:	Skills:	Assessments:

9.3.12.AR-PRT.1-3
8.2.12.B.4
8.2.12.D.5
CRP1-12
	What are basic screen printing productions?
	
	How do I set up advanced productions?
		Screen printing production
		● manual
		
		Screen printing production
		● Automatic
			Basic Production - manual
			
			a. Obtain correct size frame
			
			b. Frame preparation
			
			c. Stencil preparation
			
			d. Stencil to screen preparation
			
			2. Specific screening
			
			a. Bolt screen to machine
			
			b. Produce screen products
			
			c. Maintain machine
			
			d. Clean and troubleshoot all parts
			
			Advanced Production - Automatic
			
			a. Obtain correct size frame
			
			b. Frame preparation
			
			c. Stencil preparation
			
			d. Stencil to screen preparation
				Students participation in class activities and discussions
				
				Students behavior and attitude
				
				Demonstrations will be administered to determine the mastery of skills
				
				Test/Quiz/Skills
				
				Screen make up
				  Wood
				  Aluminium
				  Retensionable
				
				Emulsions and their use
				
				Making positives
				
				Screen exposure
				
				Washout
				
				Manual setup 1 to 6 colors
				
				Screen reclaiming
				
				Printing transfers
				
				Printing textiles

			Specific screening a. Bolt screen to machine b. Produce screen products c. Maintain machine d. Clean and troubleshoot all parts	Students participation in class activities and discussions Students behavior and attitude Demonstrations will be administered to determine the mastery of skills Test/Quiz/Skills Press setup automatic Squeegee durometers Installing screens and flood bars Wet on wet production methods

Unit: Estimating I   Length: 1 Semester

Proficiencies/Standards	Essential Questions	Content:	Skills:	Assessments:
9.3.12.AR-PRT.1-3 8.1.12.C.1 8.1.12.A.4 8.1.12.A.5 NJSLS Math: A.CED.A.3 S.IC.B.6 CRP1-12	How do I estimate a job? Why is it important to get the estimate correct? What is the best software to use for creating quotes? What is statistical analysis? How can statistics help me forecast future needs?	Basic Estimating SWBAT: Identify basic tools of the estimator. Identify basic costs involved in the printing business Identify basic cost models in industry as a whole Identifying all costs involved in the production process	Utilize knowledge of the requirements of the printing industry to give examples of each process required for a given job. Assess the requirements for a given jobs timeframe. Cost estimating based on overhead - job based - hourly constraints. Configuring software to create quotes for incoming jobs. Digitally based software used to create and track job tickets - Invoicing and payments. Cradle to Grave theory for keeping estimates available for future use. Use of statistical analysis to track efficiency of the job shop. Use of statistics to forecast future needs and purchases	Students participation in class activities and discussions Students behavior and attitude Demonstrations will be administered to determine the mastery of skills Test/Quiz/Skills Identifying overhead costs Identifying fluctuating costs Identifying needed processes in a printed job Markup Profit Subbing jobs out and the bottom line

			Cost comparison theory for the use of Traditional vs. Digital production methods Purchasing Vs. Leasing equipment and its effects on the bottom line of a printing facility Effects of overruns vs waste on the health of the business Why estimating is so imperative to a healthy business.	

Unit: Press Application III   Length: 1 Semester

Proficiencies/Standards	Essential Questions	Content:	Skills:	Assessments:
9.3.12.AR- PRT.1-3 CRP1-12	How does use of this equipment expedite the printing process? What are offset operations? How do systems of press affect color process operations?	Setup and Operations of multicolor offset printing press. Press operations Related technical skills	Identify offset operations Identify safety and operation procedures for an offset duplicator for process color printing. (2X2) Identify the systems of the press as they relate to multi-color process operations Describe the operational procedures for each of the controls and adjustments on the press as they relate to multi-color process operations Identify feeding system requirements for the use of the registration systems as they relate to multi-color process operations Through the use of computer aided plate setting verify the proper separation of the	Students participation in class activities and discussions Students behavior and attitude Demonstrations will be administered to determine the mastery of skills Test/Quiz/Skills Process printing color model Registration requirements of the process printing models Plating requirements for process printing Trapping in process jobs

			colors being printed in a process environment	
			Perform setup for printing a 4 color process job	
			Produce a printed process color job using an offset duplicator	
			Read and comprehend production information from job ticket/jacket	
			Identify safety considerations for press operations	
			Practice safe work habits on duplicator operations	
			Perform daily cleanup and maintenance	
			Perform major cleanup and roller treatment	
			Make needed pressure settings on a press	
			Install and set blanket on a press	
			Identify press operation procedure as they relate to the multicolor press operation	
			Interpret materials found in technical manuals and trade journals	

			Formulate relationships between vocabulary and actual parts of equipment and materials	
			Put all necessary steps into sequential order	
			Sequentially list underlying principles and methods of controlling work in progress	
			Describe relationship between quality assurance and manufacturing process	
			Proofread all copy to eliminate errors	
			Write factual reports	
			Write descriptive reports	
			Demonstrate computer literacy	
			Develop computer skills consistent with material taught	
			Develop computer skills pertinent to trade requirements	
			Apply methods to incorporate prior knowledge and test taking skills	

Unit: Press Applications 4 Live Environment   Length: 1 Semester

Proficiencies/Standards	Essential Questions	Content:	Skills:	Assessments:
9.3.12.AR-PRT.1-3 CRP1-12	How does use of this equipment expedite the printing process? How do I set up a four color process job? What is the proper separation of colors in a process environment?	Setup and Operations of multicolor offset printing press. Press operations SWBAT: Use all skills learned to date in the shop to create and produce live work on the presses Related technical skills	These skill s will be retrained as need to reinforce the materials covered in the first 3 semesters of the press production environment found below: Identify safety and operation procedures for an offset duplicator for process color printing. (2X2) Identify the systems of the press as they relate to multi-color process operations Describe the operational procedures for each of the controls and adjustments on the press as they relate to multi-color process operations Identify feeding system requirements for the use of the registration systems as	Students participation in class activities and discussions Students behavior and attitude Demonstrations will be administered to determine the mastery of skills Test/Quiz/Skills At this level jobs are all live and assessed as they are completed Quality control processes Students will be given NOCTI Assessments in May to verify student basic skills in the Printing Industry

			they relate to multi-color process operations	
			Through the use of computer aided plate setting verify the proper separation of the colors being printed in a process environment	
			Perform setup for printing a 4 color process job	
			Produce a printed process color job using an offset duplicator	
			Read and comprehend production information from job ticket/jacket	
			Identify safety considerations for press operations	
			Practice safe work habits on duplicator operations	
			Perform daily cleanup and maintenance	
			Perform major cleanup and roller treatment	
			Make needed pressure settings on a press	
			Install and set blanket on a press	
			Identify press operation	

			procedure as they relate to the multicolor press operation	
			Interpret materials found in technical manuals and trade journals	
			Formulate relationships between vocabulary and actual parts of equipment and materials	
			Put all necessary steps into sequential order	
			Sequentially list underlying principles and methods of controlling work in progress	
			Describe relationship between quality assurance and manufacturing process	
			Proofread all copy to eliminate errors	
			Write factual reports	
			Write descriptive reports	
			Demonstrate computer literacy	
			Develop computer skills consistent with material taught	
			Develop computer skills	

			pertinent to trade requirements Apply methods to incorporate prior knowledge and test taking skills	

Texts:

Graphic Communications "The printed image"	5th edition	Goodhart/WilcoxPrust	2010	978-1-60525-061-8