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P R E - P R E S S (1 1 B)

30S/30E/30M

A Print Media Course

8468: PRE-PRESS (11B) 30S/30E/30M

Course Description

This course is intended for students considering specialization in print media.

Curriculum content focuses on the initial stages of pre-press within the print media process. Topics include the following:

- imposition
- colour management
- file management
- image capture
- image processing
- file packaging
- image carrier output

The course includes an emphasis on essential skills related to safety and employability skills. Students also learn about career development, sustainability, and new and emerging technologies specifically related to print media design.

Cross-curricular learning outcomes, which include essential print media math, the science of print media, and the interpretation of print media documents, are to be integrated into the authentic activities of the course.

The learning outcomes are organized by Technology Fundamentals (F), Technology Skills (S), and Professional Practice (P) strands.

For instructional purposes, the sequence of outcomes and the outcomes included in each unit of study can vary based on the projects within the course.

Goal 1: Demonstrate ability to apply the creative process to develop a professional **design** for print.

GLO 1.1: Identify the **design problem**.

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| SLO 11B.F.1.1.1 | Identify cost factors (e.g., materials, labour, and quantity) for the design and print process. |
| SLO 11B.S.1.1.1 | Gather and interpret information specific to the design problem. |
| SLO 11B.S.1.1.2 | Communicate the design process as it relates to pre-press. |
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GLO 1.2: Research the **factors that influence design.**

- SLO 11B.F.1.2.1 Describe and list the basic pre-press processes that influence design.
 - SLO 11B.F.1.2.2 Identify the pre-press process and its impact on project budget.
 - SLO 11B.S.1.2.1 Identify the design specifications (e.g., colour, size, font, and images) and how pre-press translates to the finished final product.
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GLO 1.3: Recognize and apply the **elements and principles of design.**

- SLO 11B.F.1.3.1 Demonstrate a basic understanding of how elements and principles of design communicate messages effectively.
 - SLO 11B.S.1.3.1 Arrange elements by applying principles of design to recreate/create a basic layout for a variety of printed materials.
 - SLO 11B.S.1.3.2 Apply the basic rules of typography.
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GLO 1.4: Conceptualize the design solution.

- SLO 11B.F.1.4.1 Consider the appropriateness of specific typographical solutions.
 - SLO 11B.S.1.4.1 Interpret thumbnails and rough layouts using appropriate symbols (e.g., type, graphic elements).
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GLO 1.5: Communicate the design solution.

- SLO 11B.F.1.5.1 Describe the process of communicating and collaborating on a completed design with the printer.
 - SLO 11B.S.1.5.1 Verify proof to design specifications.
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GLO 1.6: Describe and apply **appropriate technology** to achieve the design solution.

- SLO 11B.F.1.6.1 Identify software (e.g., page layout, image manipulation, and illustration) used in pre-press.
- SLO 11B.F.1.6.2 Describe pre-press considerations for printability (e.g., image resolution, image mode, font structure, image format, and links).
- SLO 11B.F.1.6.3 Demonstrate basic knowledge of the purpose of press-ready proofs.
- SLO 11B.S.1.6.1 Navigate operating system and apply file management practices (e.g., naming, formats, hierarchies, and saving).

- SLO 11B.S.1.6.2 Use basic tools to create and manipulate raster and vector images for pre-press.
- SLO 11B.S.1.6.3 Verify document for printability (e.g., image resolution, image mode, font structure, image format, and links).
- SLO 11B.S.1.6.4 Apply basic typographical techniques.
- SLO 11B.S.1.6.5 Create a press-ready proof.

Goal 2: Describe and apply **graphic print production processes**.

GLO 2.1: Describe and apply appropriate **pre-press techniques**.

File Management & Information Technology (F)

- SLO 11B.F.2.1.1 Describe the impact file organization has on production (e.g., delays, cost).
- SLO 11B.F.2.1.2 Describe efficient methods for file archiving, backup, and retrieval.
- SLO 11B.F.2.1.3 Describe the navigation of an internal and external network environment.

Capture & Manipulate Images (F)

- SLO 11B.F.2.1.4 Identify types of image capture devices (e.g., scanners and cameras) and their uses.
- SLO 11B.F.2.1.5 Identify types of source images (e.g., reflective art, transparencies, paintings, and existing digital files).
- SLO 11B.F.2.1.6 Identify image properties (e.g., dimensions, dynamic range, resolution, colour space, and target profiles).
- SLO 11B.F.2.1.7 Identify quality defects of images (e.g., physical defects, posterization, pixelization, Moiré patterning, and overexposure or underexposure).
- SLO 11B.F.2.1.8 Describe basic image manipulation techniques (e.g., manipulating image content, selections, file formats, tonal shifts, retouching, colour correcting, and filter effects).

File Revisions & Pre-flight Operations (F)

- SLO 11B.F.2.1.9 Describe the importance of the pre-flight process.
- SLO 11B.F.2.1.10 Identify mark-up and proofreading symbols.
- SLO 11B.F.2.1.11 Describe basic pre-flight issues affecting the final product, as applicable (e.g., bleed, overprint, resolution, links to external files, fonts, and colour mode).

Colour Management (F)

- SLO 11B.F.2.1.12 Describe technical colour theory (e.g., colour models, colour space, CMYK, RGB, spot colour, and PMS).

SLO 11B.F.2.1.13 Describe colour profiles and the process and tools for colour measurement.

SLO 11B.F.2.1.14 Describe colour gamut of devices (e.g., input device, monitors, and output device).

Create a Proof (F)

SLO 11B.F.2.1.15 Describe the reasons for creating a proof.

SLO 11B.F.2.1.16 Describe intent (e.g., colour, content, for position only) and types of proof formats (e.g., soft copy, hard copy, contract, and imposed).

RIP Files (F)

SLO 11B.F.2.1.17 Differentiate among file formats (e.g., PDF, TIFF, and EPS) based on quality, functionality, portability, output device compatibility, and client/printer preference.

SLO 11B.F.2.1.18 Describe the colour separation process.

Impose Files (F)

SLO 11B.F.2.1.19 Define imposition in terms of print production.

SLO 11B.F.2.1.20 Describe imposition methods (e.g., work-and-turn, work-and-tumble, sheetwise, and ganging) and considerations, including efficiency and cost, printing equipment, finishing and bindery equipment, signatures, creep, and substrate properties.

Prepare File for Output (F)

SLO 11B.F.2.1.21 Describe plate-making and imaging methods including gravure, screen, offset lithography, flexography, digital, and emerging technologies.

Pre-flight Operations (F)

SLO 11B.F.2.1.22 Locate print production issues using pre-flight software and techniques.

SLO 11B.F.2.1.23 Locate and interpret mark-up information and proofreading symbols.

SLO 11B.F.2.1.24 Verify the supplied file to the job specifications and desired output (e.g., document size, page orientation, margins, bleeds, marks, page information, binding allowance, page count, and file format).

SLO 11B.F.2.1.25 Revise file based on mark-up information, proofreading symbols, job specifications, and desired output.

Colour Management (F)

SLO 11B.F.2.1.26 Compare colour to an output colour model standard (e.g., pantone swatch, and colour calibration equipment).

SLO 11B.F.2.1.27 Select correct colour mode for output.

Create a Proof (F)

SLO 11B.F.2.1.28 Output proof.

SLO 11B.F.2.1.29 Verify proof to specifications and quality standards for client approval.

RIP Files (F)

SLO 11B.F.2.1.30 Output a file for printing.

Impose Files (F)

SLO 11B.F.2.1.31 Create impositions using software.

SLO 11B.F.2.1.32 Apply imposition methods based on print job criteria.

Prepare File for Output (F)

SLO 11B.F.2.1.33 Prepare and send a file for output (e.g., digital, film, and plate).

SLO 11B.F.2.1.34 Create an image carrier (e.g., plate, stencil, and stamp).

File Management & Information Technology (S)

SLO 11B.S.2.1.1 Organize files and documents locally and in a networked environment (e.g., name, project, media, and client).

Capture & Manipulate Images (S)

SLO 11B.S.2.1.2 Prepare originals for scanning and adjust scanner settings (e.g., descreen, unsharp mask, bitmap mode, or line art).

SLO 11B.S.2.1.3 Use image capture devices (e.g., scanners, cameras).

SLO 11B.S.2.1.4 Convert file to appropriate file type for output.

SLO 11B.S.2.1.5 Verify characteristics (e.g., output intent, physical size, file size, and resolution) and printability of the image.

SLO 11B.S.2.1.6 Perform image manipulation operations to match specifications and output requirements.

GLO 2.2: Describe and apply commonly used print production methods.

SLO 11B.F.2.2.1 Describe how various printing methods influence pre-press choices.

SLO 11B.S.2.2.1 Apply pre-press techniques, as required, to output printed materials using one or more commonly used print production methods.

GLO 2.3: Describe and apply post-press methods.

SLO 11B.F.2.3.1 Describe how post-press methods influence pre-press choices.

SLO 11B.S.2.3.1 Apply pre-press techniques as required for post-press operations.

Goal 3: Operate and maintain the **tools and equipment** used in the print production industry.

GLO 3.1: Operate computer **hardware and software**.

SLO 11B.F.3.1.1 Identify commonly used software (e.g., layout, pre-flight, packaging, and imposition) in pre-press.

SLO 11B.F.3.1.2 Describe file transfer protocols and methods (e.g., FTP, HTTP).

SLO 11B.F.3.1.3 Describe the impact of file compression (e.g., ease of movement, quality).

SLO 11B.S.3.1.1 Operate pre-press computer systems and software (e.g., compression, file transfer, maintenance, and security).

SLO 11B.S.3.1.2 Use image-manipulation (e.g., raster, vector) and page-layout software related to pre-press.

SLO 11B.S.3.1.3 Use compression techniques for storage and transfer of files.

GLO 3.2: Operate and maintain **print production tools and equipment**.

SLO 11B.F.3.2.1 Identify pre-press tools and equipment (e.g., platesetter, screen and frame, imagesetter, and plate punch).

SLO 11B.S.3.2.1 Operate pre-press output equipment (e.g., load image carrier, troubleshooting).

GLO 3.3: Operate and maintain **post-press tools and equipment**.

SLO 11B.F.3.3.1 Describe basic operations of the press as they relate to pre-press methods.

SLO 11B.F.3.3.2 Describe basic operations of post-press as they relate to pre-press methods.

SLO 11B.S.3.3.1 Perform basic operations of a printing press.

SLO 11B.S.3.3.2 Apply appropriate post-press techniques as required.

GLO 3.4: Handle and store print production materials.

SLO 11B.F.3.4.1 Describe materials (e.g., film, plates, chemistry, and proofing paper) used in the pre-press process.

SLO 11B.F.3.4.2 Describe considerations for handling storage of pre-press materials.

SLO 11B.S.3.2.2 Use materials required for pre-press operations.

Goal 4: Describe and apply the transferable **cross-curricular** (e.g., math, literacy, and scientific) knowledge and skills as they apply to the print industries.

GLO 4.1: Apply **mathematical solutions** to design production problems (e.g., conversion, measurement, estimation, and accuracy).

- SLO 11B.F.4.1.1 Identify common pre-press geometry (e.g., gripper margins, tail margins, micro dots, crops, bleeds, printer's marks, registration marks, and plate size).
 - SLO 11B.F.4.1.2 Identify common sizes for substrates for the required job (e.g., business cards, envelopes, mailed products, and letterhead).
 - SLO 11B.S.4.1.1 Apply measurement to output geometry (e.g., gripper margins, tail margins, micro dots, crops, bleeds, printer's marks, registration marks, and plate size).
 - SLO 11B.S.4.1.2 Perform basic calculations (i.e., addition, subtraction, multiplication, and division of whole and decimal numbers and fractions).
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GLO 4.2: Read, write, interpret, and communicate information related to the design and print process (e.g., proofreading, visual, and/or written communication).

- SLO 11B.F.4.2.1 Describe the use of docketts and their relevance to pre-press.
 - SLO 11B.F.4.2.2 Identify resource materials related to pre-press (e.g., built-in help, online help, manuals, industry publications, and websites).
 - SLO 11B.S.4.2.1 Read simple and brief work-related materials to prepare work for printing (e.g., specifications, teacher instructions, and docketts).
 - SLO 11B.S.4.2.2 Read materials on topics related to pre-press. (e.g., manuals, online sources, RFPs, and trade magazines).
 - SLO 11B.S.4.2.3 Apply proper spelling, grammar, and punctuation to written work.
 - SLO 11B.S.4.2.4 Use ICT to research, create, and communicate.
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GLO 4.3: Describe the **physical properties of materials** used in the print production process and factors in the physical environment (e.g., conductivity, pH, and viscosity).

- SLO 11B.F.4.3.1 Describe the characteristics of paper (e.g., grains, weights, brightness, textures, and finish).

- SLO 11B.F.4.3.2 Describe materials used for the production of image carriers.
- SLO 11B.F.4.3.3 Identify the properties and manufacturing process for paper.
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Goal 5: Consider the impact of **sustainability** as it pertains to the print industry.

GLO 5.1: Appreciate the implications of the printing process on the **environment**.

- SLO 11B.F.5.1.1 Identify the significance of reducing, reusing, and recycling as it applies to pre-press.
- SLO 11B.S.5.1.1 Reduce, reuse, or recycle pre-press materials (i.e., chemicals, paper, or image carriers).
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GLO 5.2: Describe the interaction between society and the print industry and its impact on **sustainability**.

- SLO 11B.F.5.2.1 Demonstrate an awareness of diverse perspectives, including community and cultural perspectives, and how these have evolved through time.
- SLO 11B.S.5.2.1 Discuss the nature of content that is potentially harmful to human health and well-being, including physical and emotional health.
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GLO 5.3: Recognize the **economic benefits of sustainable practices** in the print industry.

- SLO 11B.F.5.3.1 Identify economic benefits of sustainable practices in the print industry (i.e., water-based inks and recycling paper, and more energy-efficient equipment).
- SLO 11B.S.5.3.1 Discuss economic benefits of sustainable practices in the print industry (i.e., water-based inks and recycling paper, and more energy-efficient equipment).
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Goal 6: Explain the **evolution, technological progression, and emerging trends** in the print industry.

GLO 6.1: Appreciate the **historical significance, social impact, and continuing evolution** and development of the print industry (e.g., the evolution and progression of design styles and approaches).

- SLO 11B.F.6.1.1 Describe the historical significance and social impact of pre-press.
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GLO 6.2: Demonstrate an awareness of the **evolution and progression of design styles and approaches.**

No applicable SLOs.

GLO 6.3: Demonstrate awareness of the continuing **evolution of the print industry**, as well as its **emerging trends and future technologies.**

SLO 11B.F.6.3.1 Demonstrate an awareness of the continuing evolution of pre-press, as well as its emerging trends and future technologies.

Goal 7: Demonstrate knowledge of appropriate **health and safety** practices and the ability to recognize and apply them to maintain a safe workplace.

GLO 7.1: Describe and apply **health and safety rights, responsibilities, and procedures.**

SLO 11B.P.7.1.1 Demonstrate adherence to safe practices and procedures for facilities, processes, materials, tools, and equipment used in pre-press.

GLO 7.2: Describe and follow **health and safety laws and regulations** as they relate to graphic print production.

SLO 11B.P.7.2.1 Describe and follow health and safety laws and regulations as they relate to pre-press.

SLO 11B.P.7.2.2 Comply with health and safety legislation and practices.

SLO 11B.P.7.2.3 Identify personal responsibility for health and safety.

SLO 11B.P.7.2.4 Describe the reporting process for injuries.

Goal 8: Describe and follow the **ethical and legal standards** in the print industry.

GLO 8.1: Describe and follow current legal responsibilities and requirements when accessing **intellectual property** (e.g., copyright, trademarks).

SLO 11B.P.8.1.1 Describe ownership rights and the process for securing intellectual property (e.g., plagiarism, copyright violation, hate literature, and acknowledging sources).

GLO 8.2: Describe and follow **ethical trade practices.**

SLO 11B.P.8.2.1 Describe and follow ethical trade practices in relation to pre-press.

Goal 9: Demonstrate **employability skills** required in the graphic design and print industries.

GLO 9.1: Demonstrate **fundamental employability skills**.

- SLO 11B.P.9.1.1 Describe the importance of employability skills in school, work, and daily life.
 - SLO 11B.P.9.1.2 Listen and ask questions to clarify problems and instructions.
 - SLO 11B.P.9.1.3 Locate, gather, and organize *trade area* information using appropriate technology and information systems.
 - SLO 11B.P.9.1.4 Assess situations and identify problems and possible solutions.
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GLO 9.2: Demonstrate **personal management skills**.

- SLO 11B.P.9.2.1 Arrive to the work station on time, ready to work.
 - SLO 11B.P.9.2.2 Demonstrate interest, initiative, and effort.
 - SLO 11B.P.9.2.3 Manage time to complete tasks/projects within stated deadlines.
 - SLO 11B.P.9.2.4 Demonstrate responsibility by being accountable for your actions and those of your group.
 - SLO 11B.P.9.2.5 Respond constructively to changes and feedback.
 - SLO 11B.P.9.2.6 Demonstrate the willingness to continuously learn.
 - SLO 11B.P.9.2.7 Appreciate the need for continuous learning in technologically dependant occupations.
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GLO 9.3: Demonstrate **teamwork skills**.

- SLO 11B.P.9.3.1 Be respectful, open to, and supportive of the thoughts, opinions, and contributions of others in a group.
 - SLO 11B.P.9.3.2 Contribute information and skills to achieve the goals of a group.
 - SLO 11B.P.9.3.3 Contribute willingly to classroom/shop activities.
 - SLO 11B.P.9.3.4 Accept and offer assistance from others.
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Goal 10: Describe **career opportunities** in the print production industry.

GLO 10.1: Demonstrate awareness of **employment and post-secondary opportunities** related to print production.

- SLO 11B.P.10.1.1 Identify and describe career and employment opportunities related to pre-press.
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