



*Supplement to the*  
**VISUAL ARTS 8 TO 10 IRP (1995)**  

---

*Required Program Model Content for*  
**Visual Arts 10:**  
*Ceramics and Sculpture*  
*Drawing and Painting*  
*Media Arts*





# TABLE OF CONTENTS

## INTRODUCTION

---

Background .....	5
Graduation Program Requirements .....	5
Visual Arts 8 to 12 .....	6
For More Information .....	6

## PROGRAM MODELS FOR VISUAL ARTS 10

---

Ceramics and Sculpture.....	9
Drawing and Painting .....	10
Media Arts.....	11

## APPENDIX

---

Ministry-Authorized Fine Arts and Applied Skills Courses .....	13
--	----



# INTRODUCTION

This document is a supplement to the Visual Arts 8 to 10 Integrated Resource Package (IRP) 1995.

## BACKGROUND

In 2002-2003, the Ministry of Education conducted a review of provincial graduation requirements. One result of that review was a decision to extend the scope of the Graduation Program from two years to three years. In the Graduation Program (2004), students who enter Grade 10 after June 30, 2004 will earn credits toward graduation in a three-year program, in grades 10, 11, and 12.

In the past, schools did not report grade 10 course grades to the Ministry of Education to be entered on student transcripts and calculated into the graduation credit formula. Integrated Resource Packages (IRPs) for grade 10 subjects in the fine arts and applied skills areas (1995-1998) were developed for delivery as year-long courses, and were designed as “general” courses in the subject to allow schools to design programs to meet the needs of their students.

One of the aims of the new Graduation Program (2004) requirements is to allow grade 10 students to have greater choice and flexibility in selecting courses to meet their education and career goals. To reflect that aim, this document outlines required program model content for three specific grade 10 visual arts courses that can be offered in addition to the existing general Visual Arts 10 course. This document does not replace the prescribed learning outcomes for grade 10 visual arts as outlined in the Visual Arts 8 to 10 IRP (1995). Each of the courses outlined here **must address both the prescribed learning outcomes and the required content** specific to the particular program model offered.

## GRADUATION PROGRAM REQUIREMENTS

Under the Graduation Program (2004) requirements, all students must complete a minimum of 4 credits in the fine arts and/or the applied skills subject areas from grades 10 to 12.

To satisfy these graduation requirements, students may take one of the following:

- a 4-credit grade 10, 11, or 12 ministry-authorized fine arts course  
OR
- a 4-credit grade 10, 11, or 12 ministry-authorized applied skills course  
OR
- a 2-credit grade 10, 11, or 12 ministry-authorized fine arts course + a 2-credit grade 10, 11, or 12 ministry-authorized applied skills course

Grade 11 board/authority authorized (BAA) courses in the fine arts or applied skills subject areas only meet the graduation requirements if they address the prescribed learning outcomes of the Fine Arts 11 IRP and/or the Applied Skills 11 IRP. Grades 10 and 12 BAA courses do not meet the fine arts/applied skills graduation requirements.

Schools have the flexibility to deliver programs in these subject areas that meet the needs of their students and communities. However, school boards are required to offer a choice of a fine arts and an applied skills educational program to all students in the 2004 graduation program.

See the appendix to this document for a full list of all ministry-authorized fine arts and applied skills courses for grades 10 to 12.

## VISUAL ARTS 8 TO 12

The following table lists all of the current ministry-authorized courses for visual arts from grades 8 to 12.

	<ul style="list-style-type: none"> <li>• Visual Arts 8</li> </ul>	
	<ul style="list-style-type: none"> <li>• Visual Arts 9</li> </ul>	
	<ul style="list-style-type: none"> <li>• Visual Arts 10: General</li> </ul> <p>Visual Arts 10 Program Models:</p> <ul style="list-style-type: none"> <li>• Visual Arts 10: Ceramics and Sculpture (VAC 10)</li> <li>• Visual Arts 10: Drawing and Painting (VAD 10)</li> <li>• Visual Arts 10: Media Arts (VAM 10)</li> </ul>	
<ul style="list-style-type: none"> <li>• Art Foundations 11</li> </ul>	<ul style="list-style-type: none"> <li>• Studio Arts 11: Ceramics and Sculpture</li> <li>• Studio Arts 11: Drawing and Painting</li> <li>• Studio Arts 11: Fabric and Fibre</li> <li>• Studio Arts 11: Printmaking and Graphic Design</li> </ul>	<ul style="list-style-type: none"> <li>• Visual Arts: Media Arts 11</li> </ul>
<ul style="list-style-type: none"> <li>• Art Foundations 12</li> </ul>	<ul style="list-style-type: none"> <li>• Studio Arts 12: Ceramics and Sculpture</li> <li>• Studio Arts 12: Drawing and Painting</li> <li>• Studio Arts 12: Fabric and Fibre</li> <li>• Studio Arts 12: Printmaking and Graphic Design</li> </ul>	<ul style="list-style-type: none"> <li>• Visual Arts: Media Arts 11</li> </ul>

Schools are encouraged to provide opportunities for students to take more than one visual arts course at each grade level. Each course must address all the learning outcomes for its designated grade.

### FOR MORE INFORMATION

The following sources contain additional information about courses, graduation program requirements, and other relevant policy.

#### *Integrated Resource Packages (IRPs)*

IRP documents contain the prescribed learning outcomes for each subject and grade, as well as suggested instruction and assessment approaches for delivering the learning outcomes within a range of course structures. The full text of all IRPs is available at <http://www.bced.gov.bc.ca/irp/irp.htm>

#### *Handbook of Procedures*

For information on additional methods of achieving the fine arts Graduation Program requirements, please refer to the Ministry of Education's *Handbook of Procedures*.  
<http://www.bced.gov.bc.ca/exams/handbook/handbook.htm>

### ***Fine Arts and Applied Skills Policy***

Policy Document: Fine Arts and Applied Skills Requirements in the Graduation Program  
[http://www.bced.gov.bc.ca/policy/policies/fine\\_arts\\_and\\_applied.htm](http://www.bced.gov.bc.ca/policy/policies/fine_arts_and_applied.htm)

Fine Arts and/or Applied Skills Requirement—2004 Graduation Program  
[http://www.bced.gov.bc.ca/graduation/finearts\\_qa.pdf](http://www.bced.gov.bc.ca/graduation/finearts_qa.pdf)

### ***Course Codes***

Course codes for ministry-authorized courses are listed in the Ministry of Education's *Course Information Book*.

<http://www.bced.gov.bc.ca/graduation/courseinfo/>

# PROGRAM MODELS FOR VISUAL ARTS 10

The Visual Arts 8 to 10 IRP (1995) is designed to provide flexibility in organizing and implementing curriculum, and to acknowledge the existing programs already in place in BC schools.

In order to recognize the diverse nature of visual arts program delivery, and to allow for greater student choice and flexibility within the new Graduation Program requirements, the learning outcomes for Visual Arts 10 can be delivered within a number of specific program models (courses), each of which must address distinct required content.

The content in the three Required Program Model Content charts beginning on the next page provides the framework within which the Visual Arts 10 prescribed learning outcomes can be delivered in specific course settings. The approved Visual Arts 10 courses, for which program model information is provided here, are as follows:

- Visual Arts 10: Ceramics and Sculpture (VAC 10)
- Visual Arts 10: Drawing and Painting (VAD 10)
- Visual Arts 10: Media Arts (VAM 10)

In addition to the courses outlined here, schools can continue to offer Visual Arts 10: General (VAG 10), which corresponds to the curriculum as originally written in the Visual Arts 8 to 10 IRP (1995).

In each of the new Visual Arts 10 courses, teachers provide opportunities for students to achieve the prescribed learning outcomes for Visual Arts 10 while creating and responding to images within a particular visual expression area. Teachers need to design their courses to address both the prescribed learning outcomes and the required content specific to the particular course.

The Required Program Model Content charts on the following pages outline this content in relation to:

- technical competence—development of technique
- presentation applications—skills and attitudes appropriate to a variety of presentation contexts
- visual culture—terminology and understanding of contexts.

These three categories are not designed to replace or supersede the curriculum organizers for Visual Arts 10. Rather, they have been used to provide an alternate way of looking at course requirements and to highlight the commonalities that exist among the various fine arts subjects.

If students are taking more than one Visual Arts 10 course, they must satisfy the learning outcomes in relation to the content for each course for which they are receiving credit—for example, a student must satisfy the program model content for both Drawing and Painting (VAD 10) and Media Arts (VAM 10) in order to receive credit for both courses.

## Required Program Model Content

### Visual Arts 10: Ceramics and Sculpture (VAC 10)

Ceramics and Sculpture 10 must incorporate the following content within the delivery of the prescribed learning outcomes for Visual Arts 10.

<p><b>Technical Competence:</b> development of techniques as specific to ceramics and sculpture</p>	<ul style="list-style-type: none"> <li>• intermediate skill building and knowledge of materials for ceramics and sculpture:             <ul style="list-style-type: none"> <li>– ceramics materials (e.g., clay bodies, glazes, stains)</li> <li>– sculpture materials (e.g., wire, wood, found materials, papier maché)</li> <li>– single medium, mixed media</li> </ul> </li> <li>• developing knowledge and use of tools and equipment for ceramics and sculpture:             <ul style="list-style-type: none"> <li>– tools and equipment for manipulating materials (e.g., moulds, forms, electric drill, chisels)</li> <li>– tools and equipment for surface treatment and decoration ( e.g., brushes, stamps, sponges, glue gun, knives, modeling tools)</li> <li>– tools and equipment used in ceramic and sculpture processes (e.g., kiln, blender, handsaw, hammer)</li> </ul> </li> <li>• developing knowledge and use of processes and techniques for ceramics and sculpture:             <ul style="list-style-type: none"> <li>– additive processes (e.g., hand building, assemblage, stitching)</li> <li>– subtractive processes (e.g., carving, sanding, cutting)</li> <li>– modelling processes (e.g., hand modelling, casting, throwing)</li> <li>– surface treatment processes (e.g., polishing, glazing, staining, painting)</li> <li>– decorative processes (e.g., embossing, engraving, fretwork, embroidery)</li> </ul> </li> <li>• developing knowledge of image development and design strategies by applying assigned strategies to personal artworks</li> <li>• developing knowledge and use of visual elements and principles of art and design as they apply to ceramics and sculpture</li> </ul>
<p><b>Presentation Applications:</b> skills and attitudes appropriate to a variety of ceramics and sculpture presentation contexts</p>	<ul style="list-style-type: none"> <li>• considerations for venue, audience, and purpose unique to ceramics and sculpture</li> <li>• documentation of development process (e.g., portfolio of process drawings to accompany a finished work, using sketchbook to plan design process)</li> <li>• analysis of ceramics and sculpture artworks from a variety of contexts and artists</li> <li>• exhibition considerations (e.g., plinths, cabinets, installation, relief vs. 3-D, groupings, artist statements)</li> </ul>
<p><b>Visual Culture:</b> appropriate visual arts terminology, and understanding of the contexts of ceramics and sculpture</p>	<ul style="list-style-type: none"> <li>• developing knowledge of artists, artworks, and movements in ceramics and sculpture across a variety of contexts</li> <li>• vocabulary related to ceramics and sculpture</li> <li>• awareness of the career pathways in which ceramics and sculpture skills are utilized, and ways to develop those skills</li> </ul>

## Required Program Model Content Visual Arts 10: Drawing and Painting (VAD 10)

Drawing and Painting 10 must incorporate the following content within the delivery of the prescribed learning outcomes for Visual Arts 10.

<p><b>Technical Competence:</b> development of techniques as specific to drawing and painting</p>	<ul style="list-style-type: none"> <li>• intermediate skill building and knowledge of materials for drawing and painting:             <ul style="list-style-type: none"> <li>– mark-making materials for drawing (e.g., charcoal, conté, graphite)</li> <li>– mark-making materials for painting (e.g., watercolour, acrylic, ink)</li> <li>– surfaces (e.g., cardboard, wood, found objects)</li> <li>– single medium, mixed media</li> </ul> </li> <li>• developing knowledge and use of tools and equipment for drawing and painting:             <ul style="list-style-type: none"> <li>– mark-making tools (e.g., brushes, pens, stylus)</li> <li>– manipulating tools (e.g., erasers, stumps, sponges, palette knives)</li> <li>– surfaces and supports (e.g., palettes, easels, boards)</li> </ul> </li> <li>• developing knowledge and use of processes and techniques for drawing and painting:             <ul style="list-style-type: none"> <li>– drawing techniques (e.g., gesture, blind contour, continuous line)</li> <li>– painting techniques (e.g., wash, wet on dry, wet on wet)</li> <li>– additive and subtractive processes (e.g., scraffito, erasing, glazing)</li> <li>– mixed media processes (e.g., layering, collage)</li> <li>– technical skills related to particular art movements and styles (e.g., pointillism, impressionism)</li> </ul> </li> <li>• demonstrating the use of a selection of techniques for a given painting medium</li> <li>• choosing an appropriate medium for an image from a limited selection of mediums</li> <li>• developing knowledge of image development and design strategies by applying assigned strategies to image making projects</li> <li>• developing knowledge and use of visual elements and principles of art and design as they apply to drawing and painting (e.g., understand and work with assigned specific colour palettes: analogous, split complementary, triad)</li> </ul>
<p><b>Presentation Applications:</b> skills and attitudes appropriate to a variety of drawing and painting presentation contexts</p>	<ul style="list-style-type: none"> <li>• considerations for venue, audience, and purpose unique to drawing and painting (e.g., subjects appropriate to particular contexts)</li> <li>• skilled use of matting and mounting</li> <li>• analysis of drawing and painting artworks from a variety of contexts and artists</li> <li>• presentation options (e.g., portfolio, exhibition, book)</li> <li>• exhibition considerations (e.g., selecting arranging, hanging)</li> </ul>
<p><b>Visual Culture:</b> appropriate visual arts terminology, and understanding of the contexts of drawing and painting</p>	<ul style="list-style-type: none"> <li>• developing knowledge of artists, artworks, and movements in drawing and painting across a variety of contexts</li> <li>• vocabulary related to drawing and painting</li> <li>• awareness of the career pathways in which drawing and painting skills are utilized, and ways to develop those skills</li> </ul>

## Required Program Model Content Visual Arts 10: Media Arts (VAM 10)

Media Arts 10 must incorporate the following content within the delivery of the prescribed learning outcomes for Visual Arts 10.

<p><b>Technical Competence:</b> development of techniques as specific to media arts</p>	<ul style="list-style-type: none"> <li>• introductory knowledge and use of materials for media arts:             <ul style="list-style-type: none"> <li>– graphic design materials (e.g., markers, paper, ink)</li> <li>– image and sound recording materials (e.g., film, tape, disc)</li> <li>– printmaking materials (e.g., developing chemicals, ink cartridges)</li> </ul> </li> <li>• introductory knowledge and use of tools and equipment for media arts:             <ul style="list-style-type: none"> <li>– computer hardware (e.g., scanners, drives, printers, USB, firewire)</li> <li>– cameras (e.g., film, digital, video)</li> <li>– image manipulation (e.g., mixers, analogue editing, digital video editing, image manipulation software)</li> <li>– peripheral hardware (e.g., cables, microphones, power sources, lights)</li> </ul> </li> <li>• introductory knowledge and use of processes and techniques for media arts:             <ul style="list-style-type: none"> <li>– planning (e.g., storyboards, proposals, drafts)</li> <li>– refining (e.g., layout, digital manipulation, in process critique)</li> <li>– production (e.g., shooting, character creation, set-up)</li> <li>– publishing (e.g., printing, output to tape, DVD, web)</li> </ul> </li> <li>• developing knowledge of image development and design strategies as they apply to media arts</li> <li>• developing knowledge and use of visual elements and principles of art and design as they apply to media arts</li> </ul>
<p><b>Presentation Applications:</b> skills and attitudes appropriate to a variety of media arts presentation contexts</p>	<ul style="list-style-type: none"> <li>• considerations for venue, audience, and purpose unique to media arts (e.g., advertising, mass communication, public screening requirements, editions)</li> <li>• legal and ethical considerations relevant to media arts (e.g., appropriation of imagery, music recording rights, privacy)</li> <li>• electronic publishing (e.g., photo printing, web publishing, print to tape, DVD)</li> <li>• analysis of media presentations from a variety of contexts and artists</li> <li>• artist’s statements, client proposals</li> </ul>
<p><b>Visual Culture:</b> appropriate visual arts terminology, and understanding of the contexts of media arts</p>	<ul style="list-style-type: none"> <li>• developing of artists, artworks, and genres in media arts across a variety of contexts</li> <li>• vocabulary related to media arts</li> <li>• understand the purposes and applications of media artworks (e.g., persuasive, expository, promotion, public viewing)</li> <li>• awareness of the career pathways in which media art skills are utilized, and ways to develop those skills</li> </ul>



# Appendix:

## Ministry-Authorized Fine Arts and Applied Skills Courses

The following tables list all of the ministry-authorized fine arts and applied skills courses for grades 10-12, as described in IRPs, 1995-2004 (available online at <http://www.bced.gov.bc.ca/irp/irp.htm>).

### FINE ARTS

Grade 10	Grade 11	Grade 12
	<ul style="list-style-type: none"> <li>• Fine Arts 11 (2 credits)</li> </ul>	
<ul style="list-style-type: none"> <li>• Dance 10: General</li> <li>• Dance 10: Dance Performance</li> <li>• Dance 10: Dance Choreography</li> </ul>	<ul style="list-style-type: none"> <li>• Dance: Choreography 11</li> <li>• Dance: Performance 11</li> </ul>	<ul style="list-style-type: none"> <li>• Dance: Choreography 12</li> <li>• Dance: Performance 12</li> </ul>
<ul style="list-style-type: none"> <li>• Drama 10: General</li> <li>• Drama 10: Theatre Performance</li> <li>• Drama 10: Theatre Production</li> </ul>	<ul style="list-style-type: none"> <li>• Drama: Film and Television 11</li> <li>• Theatre Performance 11: Acting</li> <li>• Theatre Performance 11: Directing and Script Development</li> <li>• Theatre Production 11</li> </ul>	<ul style="list-style-type: none"> <li>• Drama: Film and Television 12</li> <li>• Theatre Performance 12: Acting</li> <li>• Theatre Performance 12: Directing and Script Development</li> <li>• Theatre Production 12: Technical Theatre</li> <li>• Theatre Production 12: Theatre Management</li> </ul>
<ul style="list-style-type: none"> <li>• Music 10: General</li> <li>• Music 10: Concert Choir</li> <li>• Music 10: Vocal Jazz</li> <li>• Music 10: Concert Band</li> <li>• Music 10: Jazz Band</li> <li>• Music 10: Orchestral Strings</li> <li>• Music 10: Guitar</li> </ul>	<ul style="list-style-type: none"> <li>• Choral Music 11: Concert Choir</li> <li>• Choral Music 11: Vocal Jazz</li> <li>• Instrumental Music 11: Concert Band</li> <li>• Instrumental Music 11: Jazz Band</li> <li>• Instrumental Music 11: Orchestral Strings</li> <li>• Instrumental Music 11: Guitar</li> <li>• Music: Composition and Technology 11</li> </ul>	<ul style="list-style-type: none"> <li>• Choral Music 12: Concert Choir</li> <li>• Choral Music 12: Vocal Jazz</li> <li>• Instrumental Music 12: Concert Band</li> <li>• Instrumental Music 12: Jazz Band</li> <li>• Instrumental Music 12: Orchestral Strings</li> <li>• Instrumental Music 12: Guitar</li> <li>• Music: Composition and Technology 12</li> </ul>
<ul style="list-style-type: none"> <li>• Visual Arts 10: General</li> <li>• Visual Arts 10: Ceramics and Sculpture</li> <li>• Visual Arts 10: Drawing and Painting</li> <li>• Visual Arts 10: Media Arts 10</li> </ul>	<ul style="list-style-type: none"> <li>• Art Foundations 11</li> <li>• Studio Arts 11: Ceramics and Sculpture</li> <li>• Studio Arts 11: Drawing and Painting</li> <li>• Studio Arts 11: Fabric and Fibre</li> <li>• Studio Arts 11: Printmaking and Graphic Design</li> <li>• Visual Arts: Media Arts 11</li> </ul>	<ul style="list-style-type: none"> <li>• Art Foundations 12</li> <li>• Studio Arts 12: Ceramics and Sculpture</li> <li>• Studio Arts 12: Drawing and Painting</li> <li>• Studio Arts 12: Fabric and Fibre</li> <li>• Studio Arts 12: Printmaking and Graphic Design</li> <li>• Visual Arts: Media Arts 12</li> </ul>

## APPLIED SKILLS

Grade 10	Grade 11	Grade 12
<ul style="list-style-type: none"> <li>• Business Education 10: General</li> <li>• Business Education 10: Communication</li> <li>• Business Education 10: Entrepreneurship</li> <li>• Business Education 10: Finance and Economics</li> <li>• Business Education 10: Marketing</li> </ul>	<ul style="list-style-type: none"> <li>• Applied Skills 11 (2 credits)</li> <li>• Accounting 11</li> <li>• Business Computer Applications 11</li> <li>• Marketing 11</li> </ul>	<ul style="list-style-type: none"> <li>• Accounting 12</li> <li>• Business Information Management 12</li> <li>• Data Management 12</li> <li>• Economics 12</li> <li>• Entrepreneurship 12</li> <li>• Financial Accounting 12</li> <li>• Management Innovation 12</li> <li>• Marketing 12</li> </ul>
<ul style="list-style-type: none"> <li>• Home Economics 10: General</li> <li>• Home Economics 10: Foods</li> <li>• Home Economics 10: Textiles</li> <li>• Home Economics 10: Family Studies</li> </ul>	<ul style="list-style-type: none"> <li>• Cafeteria Training 11</li> <li>• Family Studies 11</li> <li>• Food Studies 11</li> <li>• Textile Studies 11</li> </ul>	<ul style="list-style-type: none"> <li>• Cafeteria Training 12</li> <li>• Family Studies 12</li> <li>• Food Studies 11</li> <li>• Textile Studies 12</li> </ul>
<ul style="list-style-type: none"> <li>• Information Technology 10</li> </ul>	<ul style="list-style-type: none"> <li>• Information and Communications Technology: Applied Digital Communications 11</li> <li>• Information and Communications Technology: Computer Information Systems 11</li> <li>• Information and Communications Technology: Computer Programming 11</li> <li>• Information and Communications Technology: Digital Media Development 11</li> </ul>	<ul style="list-style-type: none"> <li>• Information and Communications Technology: Applied Digital Communications 12</li> <li>• Information and Communications Technology: Computer Information Systems 12</li> <li>• Information and Communications Technology: Computer Programming 12</li> <li>• Information and Communications Technology: Digital Media Development 12</li> </ul>
<ul style="list-style-type: none"> <li>• Technology Education 10: General</li> <li>• Technology Education 10: Drafting and Design</li> <li>• Technology Education 10: Electronics</li> <li>• Technology Education 10: Mechanics</li> <li>• Technology Education 10: Metalwork</li> <li>• Technology Education 10: Woodwork</li> </ul>	<ul style="list-style-type: none"> <li>• Automotive Technology 11</li> <li>• Carpentry and Joinery 11</li> <li>• Drafting and Design 11</li> <li>• Electronics 11</li> <li>• Metal Fabrication and Machining 11</li> </ul>	<ul style="list-style-type: none"> <li>• Automotive Technology 12</li> <li>• Automotive Technology 12: Automotive Electricity and Electronics</li> <li>• Automotive Technology 12: Body Repair and Finish</li> <li>• Automotive Technology 12: Engine and Drive Train</li> <li>• Carpentry and Joinery 12</li> <li>• Carpentry and Joinery 12: Cabinet Construction</li> <li>• Carpentry and Joinery 12: CNC Wood Processes</li> <li>• Carpentry and Joinery 12: Residential Construction</li> <li>• Carpentry and Joinery 12: Woodcraft Products</li> <li>• Drafting and Design 12</li> <li>• Drafting and Design 12: Advanced Design</li> <li>• Drafting and Design 12: Architecture and Habitat Design</li> </ul>

Grade 10	Grade 11	Grade 12
		<ul style="list-style-type: none"> <li>• Drafting and Design 12: Engineering and Mechanical Drafting</li> <li>• Drafting and Design 12: Technical Visualization</li> <li>• Electronics 12</li> <li>• Electronics 12: Analog Systems</li> <li>• Electronics 12: Digital Systems</li> <li>• Electronics 12: Robotics</li> <li>• Metal Fabrication and Machining 12: Advanced Fabrication</li> <li>• Metal Fabrication and Machining 12: Advanced Machining</li> <li>• Metal Fabrication and Machining 12: Advanced Welding</li> <li>• Metal Fabrication and Machining 12: Art Metal and Jewellery</li> <li>• Metal Fabrication and Machining 12: CNC Processes</li> <li>• Metal Fabrication and Machining 12: Forging and Foundry</li> <li>• Metal Fabrication and Machining 12: Sheet Metal</li> </ul>

