

COURSE FAB1160: PRODUCTION SYSTEMS**Level:** Introductory**Theme:** Production Systems and Processes**Prerequisite:** FAB1010 Fabrication Tools & Materials**Description:** Students investigate and compare the principles of production operation and the characteristics of a number of production systems.**Parameters:** Access to a materials work centre complete with basic hand and power tools, and to instruction from an individual with specialized training in the use of basic hand and power tools.**Curriculum and Assessment Standards**

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<i>The student will:</i> <ul style="list-style-type: none"> • list and describe common methods of manufacturing durable products • demonstrate basic production planning and management skills • identify the present and future career opportunities related to the production of durable products 	<i>Assessment of student achievement should be based on:</i> <ul style="list-style-type: none"> • written or oral report that identifies and describes two or more different methods of manufacturing, such as custom, job-lot, continuous and just-in-time 	15
	<ul style="list-style-type: none"> • collaboratively designed and developed production system that includes: <ul style="list-style-type: none"> – rationale for the type of system being used – production flow chart – resource and equipment requirements 	70
	<ul style="list-style-type: none"> • presentation of a career profile that outlines: <ul style="list-style-type: none"> – present and future career opportunities – skill requirements – training opportunities. <p><i>Assessment Tool</i> <i>Presentations/Reports: Planning a Production System, FAB1160-1</i></p> <p><i>Standard</i> <i>Performance rating of 1 for each applicable task</i></p>	15

COURSE FAB1160: PRODUCTION SYSTEMS (continued)

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> demonstrate basic competencies. 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> observations of individual effort and interpersonal interaction during the learning process. <p><i>Assessment Tool</i> <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	<p>Integrated throughout</p>

Concept	Specific Outcomes	Notes
<p>Orientation</p> <ul style="list-style-type: none"> Types of Manufacturing Systems Health and Safety 	<p><i>The student should:</i></p> <ul style="list-style-type: none"> list and describe the four basic types of manufacturing systems: <ul style="list-style-type: none"> – custom – job-lot – continuous – just-in-time describe safety rules and guidelines associated with the task and working conditions identify common hazards associated with the use of a specific tool, machining material or process inspect for and correct potential hazards within the working environment describe a safety plan in case of an accident. 	<p>Explain how these manufacturing systems differ from each other.</p>
<p>Planning and Management</p> <ul style="list-style-type: none"> Choosing a Manufacturing System 	<ul style="list-style-type: none"> select a manufacturing system based on: <ul style="list-style-type: none"> – number of products to be produced – availability of resources – type of product – life cycle and durability of a product. 	<p>Consider having students work together to produce a product(s) using one of the production systems outlined in this course.</p>

COURSE FAB1160: PRODUCTION SYSTEMS (continued)

Concept	Specific Outcomes	Notes
<ul style="list-style-type: none"> • Product Design • Production Engineering • Production Tooling 	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • explain the importance of: <ul style="list-style-type: none"> – appeal – ease of manufacture – use of standardized parts – quality – cost when selecting a product • describe what tools, materials and processes will be required to manufacture the product • help prepare a flow chart that: <ul style="list-style-type: none"> – combines the worker, machines and materials in an organized unit – requires minimal movement of the worker and materials – identifies specific operations • explain the importance of providing for: <ul style="list-style-type: none"> – personal and environmental safety – easy access to utilities – ventilation – lighting – waste disposal – material and product handling • help design jigs, template and fixtures based on: <ul style="list-style-type: none"> – ease of use – ability to reduce error – cost and safety. 	
<p>Implementation</p> <ul style="list-style-type: none"> • Production Work 	<ul style="list-style-type: none"> • help design, construct, and operate a production system. 	
<p>Assessment</p> <ul style="list-style-type: none"> • Quality Control 	<ul style="list-style-type: none"> • identify when a product is at standard, needs reworking or should be rejected 	<p>Discuss the issue of quality control</p>

COURSE FAB1160: PRODUCTION SYSTEMS (continued)

Concept	Specific Outcomes	Notes
<ul style="list-style-type: none">• Career Information • Career Preparation	<p><i>The student should:</i></p> <ul style="list-style-type: none">• identify the career opportunities in the field of manufacturing durable products• describe the impact of technology on the future of careers in the manufacturing sector• analyze personal interests and abilities related to making realistic career choices• prepare a record of completed activities within a portfolio.	