

# APPRENTICESHIP & CERTIFICATION

## Study Guide Machinist



  
Newfoundland  
Labrador

# **Apprenticeship and Certification**

## **Study Guide**

# **Machinist**

**(Based on 2013 NOA)**

Government of Newfoundland and Labrador  
Department of Advanced Education, Skills and Labour  
Apprenticeship and Trades Certification Division

**Version 6**  
**March 2019**

# Table of Contents

---

|  |    |
|--|----|
| Introduction .....   | 3  |
| Exam Process .....   | 4  |
| Before the Exam.....   | 4  |
| During the Exam.....   | 4  |
| After the Exam .....   | 4  |
| Exam Format .....  | 5  |
| Exam Content.....  | 9  |
| Understanding the National Occupational Analysis (NOA) ..... | 9  |
| Exam Breakdown .....   | 11 |
| NOA Sub-tasks.....   | 12 |
| Task Profile Checklist .....                                 | 13 |
| Create a Study Plan.....                                     | 19 |
| Resources - Websites .....                                   | 22 |
| Resources – Book List.....                                   | 23 |
| Conclusion.....  | 24 |

## Appendices

|  |    |
|--|----|
| Appendix A: Regional Offices .....     | 25 |
| Appendix B: Calculator Use.....        | 26 |
| Appendix C: Answer Sheet Example ..... | 27 |

## Introduction

---

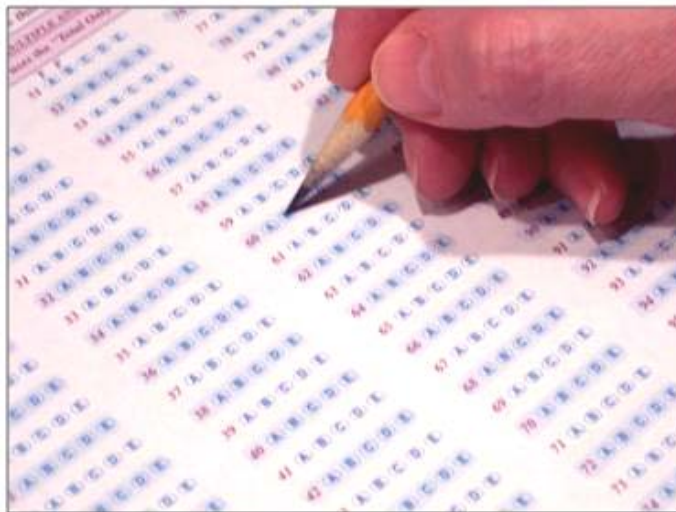
This Study Guide has been developed by the Newfoundland and Labrador Department of Advanced Education, Skills and Labour, Apprenticeship and Trades Certification Division, to assist apprentices and trade qualifiers as they prepare to write the Interprovincial (IP) Red Seal Exam. IP Exams are available for all Red Seal trades. For a list of Interprovincial trades please refer to the Department of Advanced Education, Skills and Labour website:

<https://www.aesl.gov.nl.ca/app/trades.html>

**Some of the specific goals of this guide are:**

- ⇒ to help you understand the skills and knowledge that might be covered on the exam
- ⇒ to help you identify your strengths and weaknesses
- ⇒ to provide organization and structure for a course of study
- ⇒ to provide a list of resources to help you with your study plan
- ⇒ to support and supplement the teaching and learning process

This study guide outlines the theoretical portion of the program. The intent is not to replace technical training provided under the guidance of instructors. Rather, it is a tool to be used in conjunction with formal training.



## Exam Process

---

### Before the Exam

You must contact the nearest Apprenticeship and Trades Certification Divisional office to make request to write the IP Red Seal exam (*See Appendix A for a list of regional offices*). Upon approval, the Apprenticeship Program Officer (APO) will notify you of your eligibility to write the exam, and provide you with scheduling information. If you require special accommodations due to a disability or language barrier, please contact your regional office for information on applying for this service.

### During the Exam

**You must bring:**

- personal identification such as a photo or signature ID or valid Newfoundland and Labrador driver's license
- your notification letter

**The following will be provided:**

- a calculator (*see Appendix B for calculator information*)
- all other items required such as pencils, scrap paper, etc.

**Important Note:**

Personal cell phones, calculators, or other electronic equipment are NOT allowed into the exam room. If you do bring them, they will be stored away and returned to you when you have completed the exam.

### After the Exam

Results will be mailed to you approximately seven to ten days after completion of the exam. All necessary instructions and information will be provided in the results letter.

The percentage mark you obtained will be provided. You will also be given a section by section breakdown, showing how many questions were in each section, as well as the number of questions in each section you completed successfully.

If you are successful in obtaining a 70% or more on your exam, you will be issued a Newfoundland and Labrador Certificate of Qualification with a Red Seal endorsement.

## Exam Format

---

All IP Red Seal exams are written in multiple-choice format. Each exam has between 100 and 150 questions. A multiple choice question consists of a stem (a complete question) followed by four options (A, B, C, D). The stem contains all the information necessary to answer the question. The options consist of the one correct answer and three “distracters.” Distracters are incorrect. (See Appendix C for a sample answer sheet).

IP Red Seal exams contain three types of questions:

### Level 1 Knowledge and Recall

Questions at this level test your ability to recall and understand definitions, facts, and principles.

### Level 2 Procedural and Application

Questions at this level test your ability to apply your knowledge of procedures to a new situation.

### Level 3 Critical Thinking

Questions at this level test your ability to interpret data, solve problems and arrive at valid conclusions.

On the following pages, examples of each of the three types of questions are provided.

#### Level 1 Examples:

1. Which type of hole requires a spiral-fluted hand reamer?
  - A. Oval-shaped.
  - B. Oversized.
  - C. Bell-mouthed.
  - D. Keyed or slotted.



2. Why is a grinding allowance left on the workpiece prior to heat treatment process?

- A. Material shrinkage.
- B. Material hardening.
- C. Material distortion.
- D. Material expansion.



3. What product is used to check the final fit of mating tapers?

- A. Layout dye.
- B. Prussian blue.
- C. Penetrating dye.
- D. Lapping compound.



### Level 2 Examples:

1. What size is the gauge block build-up used with a 5 in. sine bar to set the work piece at an angle of  $4^{\circ}, 30'$ ?

- A. 0.1961 in.
- B. 0.3923 in.
- C. 0.4537 in.
- D. 0.7846 in.



2. Which offset is required to produce an eccentric with a throw of 0.400 in.?

- A. 0.100 in.
- B. 0.200 in.
- C. 0.300 in.
- D. 0.400 in.



3. Which instruments are used to measure a 1 in. diameter bored hole with a tolerance of  $\pm 0.001$  in.?

- A. Centre gauge and gauge blocks.
- B. Dial indicator and gauge blocks.
- C. Spring-joint dividers and micrometer.
- D. Telescopic gauge and micrometer.



### Level 3 Examples:

1. What is the time required to turn SAE 4140 steel to 2 in. diameter down to 1.875 in. diameter with a depth of cut at 0.0625 in., 9 in. in length, using a cutting speed of 70 sfpm, with a feed rate of 0.006 in. per revolution?

$$[\text{rpm} = (12 \times \text{CS}) \div (\text{p} \times \text{D})]$$

- A. 11 minutes, 13 seconds.
- B. 12 minutes, 31 seconds.
- C. 14 minutes, 30 seconds.
- D. 15 minutes, 37 seconds.





2. How far is the centerline of the spindle from the edge of the workpiece when using a 0.200 in. diameter edge finder?

- A. 0.100 in.
- B. 0.200 in.
- C. 0.300 in.
- D. 0.400 in.



3. Which type of grinding machine is used to produce 1000 dowel pins that measure 0.250 in. diameter?

- A. Cylindrical.
- B. Centreless.
- C. Surface.
- D. Vertical.



Source of questions:

[www.red-seal.ca/s.1mpl.2.2x.1mQ.5.2st.3.4ns-eng.html?tid=139](http://www.red-seal.ca/s.1mpl.2.2x.1mQ.5.2st.3.4ns-eng.html?tid=139)

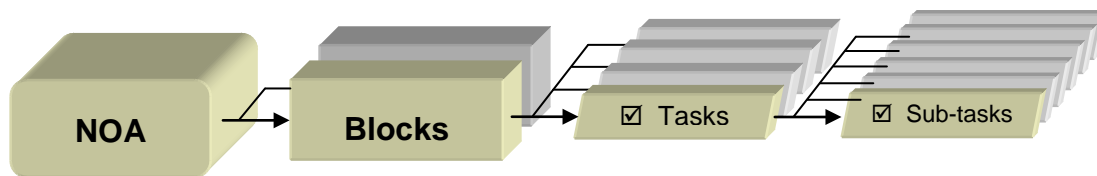
## Exam Content

---

### Understanding the *National Occupational Analysis (NOA)*

The NOA is a document used for Red Seal trades that describes the knowledge, skills and abilities required by a fully competent tradesperson working in that trade. The content for the IP Red Seal exam is based on the NOA. The NOA is an excellent tool to use as you study for the Red Seal exam. NOAs can be found at [www.red-seal.ca](http://www.red-seal.ca).

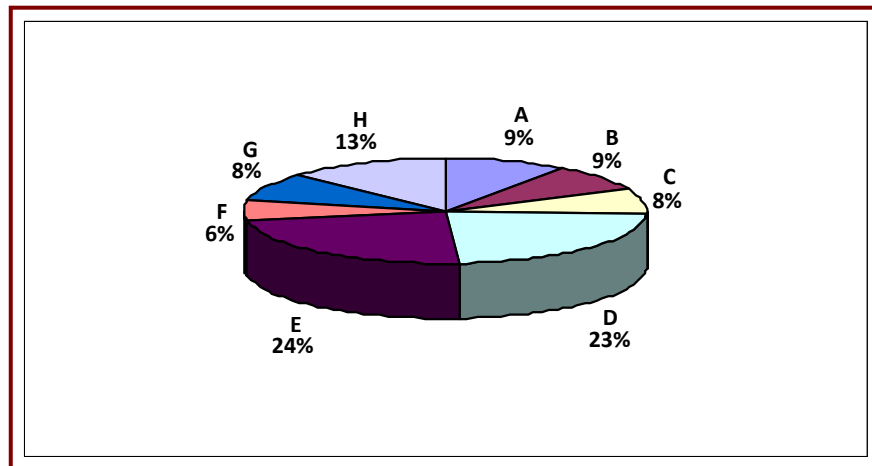
NOA material is organized into major content areas called **BLOCKS**. The blocks are further broken down into **TASKS** and **SUB-TASKS**.



## NOA Pie Chart

The NOA Pie Chart presents the block percentages in the form of a pie chart which tells you the approximate number of questions from each block. For example, 9% of the questions on the **Machinist** Exam will be based on **Block A**.

**MACHINIST**



| Block Titles   |                            |                |  |
|----------------|----------------------------|----------------|--|
| <b>Block A</b> | Common Occupational Skills | <b>Block E</b> | Conventional Milling Machines                  |
| <b>Block B</b> | Bench Work                 | <b>Block F</b> | Power Saws                                     |
| <b>Block C</b> | Drill Presses              | <b>Block G</b> | Precision Grinding Machines                    |
| <b>Block D</b> | Conventional Lathes        | <b>Block H</b> | Computer Numerical Control (CNC) Machine-Tools |

## Exam Breakdown

The **Machinist** IP Red Seal Exam has 135 questions. The following table shows a breakdown of the approximate number of questions that come from each NOA block. It is important to note that the number of questions can change at any time. When you are ready to write your exam, you may contact your regional office to verify the number of questions (See Appendix A).

|                |   | # of Questions |
|----------------|---|----------------|
| <b>Block A</b> | <b>Common Occupational Skills</b>                     | <b>13</b>      |
| <b>Task 1</b>  | Organizes work  |                |
| <b>Task 2</b>  | Processes workpiece material                          |                |
| <b>Task 3</b>  | Maintains machines and tooling                        |                |
| <b>Block B</b> | <b>Bench Work</b>                                     | <b>12</b>      |
| <b>Task 4</b>  | Performs hand processes                               |                |
| <b>Task 5</b>  | Refurbishes components                                |                |
| <b>Block C</b> | <b>Drill Presses</b>                                  | <b>11</b>      |
| <b>Task 6</b>  | Sets up drill presses                                 |                |
| <b>Task 7</b>  | Operates drill presses                                |                |
| <b>Block D</b> | <b>Conventional Lathes</b>                            | <b>31</b>      |
| <b>Task 8</b>  | Sets up conventional lathes                           |                |
| <b>Task 9</b>  | Operates conventional lathes                          |                |
| <b>Block E</b> | <b>Conventional Milling Machines</b>                  | <b>31</b>      |
| <b>Task 10</b> | Sets up conventional milling machines                 |                |
| <b>Task 11</b> | Operates conventional milling machines                |                |
| <b>Block F</b> | <b>Power Saws</b>                                     | <b>8</b>       |
| <b>Task 12</b> | Sets up power saws                                    |                |
| <b>Task 13</b> | Operates power saws                                   |                |
| <b>Block G</b> | <b>Precision Grinding Machines</b>                    | <b>12</b>      |
| <b>Task 14</b> | Sets up precision grinding machines                   |                |
| <b>Task 15</b> | Operates precision grinding machines                  |                |
| <b>Block H</b> | <b>Computer Numerical Control (CNC) Machine-Tools</b> | <b>17</b>      |
| <b>Task 16</b> | Performs basic CNC programming                        |                |
| <b>Task 17</b> | Sets up CNC machine-tools                             |                |
| <b>Task 18</b> | Operates CNC machine-tools                            |                |
| <b>Total</b>   |   | <b>135</b>     |

## NOA Sub-tasks

The following *NOA Task Profile Checklist* outlines the blocks, tasks and sub-tasks for your trade. The IP Red Seal exam is written to test your knowledge and abilities regarding the sub-tasks in the NOA. This chart can be used to review your current knowledge. You can review by placing a checkmark (✓) next to those you understand fully.

Place your focus on those you do not understand and study them until you are comfortable with the material. Think of possible questions in that particular content area.

The NOA also contains a list of “supporting knowledge and abilities” for each sub-task. They are the skills and knowledge you must have to perform a sub-task. The supporting knowledge and abilities identified under each sub-task will be very helpful as you review. The list can be found in the NOA for your trade.

# Task Profile Checklist Based on 2013 NOA Machinist

## Block A: Common Occupational Skills

### Task 1: Organizes Work

#### Sub-Tasks

- Interprets documentation
- Plans sequence of operations
- Maintains safe work environment
- Uses personal protective equipment (PPE) and safety equipment
- Uses hoisting, lifting and rigging equipment

### Task 2: Processes Workpiece Material

#### Sub-Tasks

- Selects workpiece material
- Performs layout
- Marks workpiece for identification
- Performs basic heat treatment
- Tests workpiece materials
- Deburrs workpiece
- Sketches parts

### Task 3: Maintains Machines and Tooling

#### Sub-Tasks

- Cleans machines
- Lubricates machines
- Sharpens tooling
- Applies cutting fluids and coolants
- Trouble-shoots equipment
- Maintains machine alignment
- Maintains inspection equipment

## Block B: Bench Work

### Task 4: Performs Hand Processes

#### Sub-Tasks

- Files workpiece
- Saws workpiece
- Performs hole-making operations
- Performs threading operations
- Installs thread inserts
- Broaches workpiece
- Performs pressing operations
- Bends workpiece
- Finishes workpiece

### Task 5: Refurbishes Components

#### Sub-Tasks

- Disassembles components
- Analyzes components
- Assembles components

## Block C: Drill Presses

### Task 6: Sets Up Drill Presses

#### Sub-Tasks

- Selects drill press types
- Plans drill press sequence
- Selects drill press speeds and feeds
- Sets up jigs, fixtures and work holding devices for drill presses
- Sets up tooling for drill presses

### Task 7: Operates Drill Presses

#### Sub-Tasks

- Drills holes using a drill press
- Cuts countersinks, counterbores, chamfers and spot faces using a drill press
- Performs tapping using a drill press
- Finishes holes using a drill press

## Block D: Conventional Lathes

### Task 8: Sets Up Conventional Lathes

#### Sub-Tasks

- Selects conventional lathe types
- Plans sequence of operations for conventional lathes
- Sets up work holding devices for conventional lathes
- Sets up tooling for conventional lathes
- Sets up conventional lathe accessories
- Sets up workpiece on conventional lathe
- Selects conventional lathe speeds and feeds
- Sets up eccentrics on conventional lathes

### Task 9: Operates Conventional Lathes

#### Sub-Tasks

- Turns external surfaces using a conventional lathe
- Bores holes using a conventional lathe
- Faces surfaces using a conventional lathe
- Turns tapers on a conventional lathe
- Knurls using a conventional lathe
- Parts off workpiece using a conventional lathe
- Drills using a conventional lathe
- Reams holes using a conventional lathe
- Cuts grooves using a conventional lathe
- Cuts threads using a conventional lathe

## Block E: Conventional Milling Machines

### Task 10: Sets up Conventional Milling Machines

#### Sub-Tasks

- Selects conventional milling machine types
- Plans milling sequence
- Sets up work holding devices for conventional milling machines
- Sets up tooling for conventional milling machines
- Sets up milling accessories
- Sets up workpiece on a conventional milling machine
- Selects conventional milling machine speeds and feeds



## Block E: Conventional Milling Machines (Cont'd)

### Task 11: Operates Conventional Milling Machines

#### Sub-Tasks

- Mills surfaces using a conventional milling machine
- Mills profiles and pockets using a conventional milling machine
- Mills slots, grooves and keyways using a conventional milling machine
- Cuts gears and splines using a conventional milling machine
- Drills holes using a conventional milling machine
- Reams holes using a conventional milling machine
- Cuts countersinks, counterbores, and chamfers and spot faces using a conventional milling machine
- Performs tapping using a conventional milling machine
- Bores holes using a conventional milling machine

## Block F: Power Saws

### Task 12: Sets Up Power Saws

#### Sub-Tasks

- Selects power saw types
- Selects saw blades
- Installs saw blades
- Selects power saw speeds and feeds
- Makes power saw adjustments
- Sets up workpiece on power saw

### Task 13: Operates Power Saws

#### Sub-Tasks

- Saws straight and angle cuts
- Cuts irregular shapes

## Block G: Precision Grinding Machines

### Task 14: Sets up Precision Grinding Machines

#### Sub-Tasks

- Selects precision grinding machine types
- Plans grinding sequence
- Sets up work holding devices for precision grinding machines
- Mounts grinding wheel
- Sets up grinding accessories
- Sets up workpiece on precision grinding machines
- Selects precision grinding machine speeds and feeds

### Task 15: Operates Precision Grinding Machines

#### Sub-Tasks

- Grinds flat surfaces using a surface grinder
- Grinds profiles
- Grinds internal and external cylindrical and tapered surfaces
- Grinds tools and cutters
- Finishes holes using a honing machine

## Block H: Computer Numerical Control (CNC) Machine-Tools

### Task 16: Performs Basic CNC Programming

#### Sub-Tasks

- Reviews process documentation
- Calculates coordinates for tool path
- Creates basic program
- Inputs program into control memory
- Optimizes program

### Task 17: Sets up CNC Machine-Tools

#### Sub-Tasks

- Selects tooling and tool holders for CNC machine-tools
- Sets up tooling and tool holders for CNC machine-tools
- Sets up workpiece on CNC machine-tools
- Establishes work datum
- Verifies program

## Block H: Computer Numerical Control (CNC) Machine-Tools (Cont'd)

### Task 18: Operates CNC Machine-Tools

#### *Sub-Tasks*

- Adjusts offsets
- Monitors machining processes
- Interrupts program cycle
- Restarts program cycle

## Create a Study Plan

---

As you prepare for your exam, it is important to plan a schedule. The following two tables will help you stay on track.

The first table is a **“Weekly Study Plan.”** In this table list the areas you will focus your study for each day. You should include items you need to review as well as items you need to study. Remember, more time will be needed for study in areas you find difficult, whereas you may only require review in areas you are more familiar with. As you work through the NOA sub-task list you can start to fill in this table.

The second table is a **“Study Time Table.”** It is important to create a study schedule where you determine the best days of the week and times of day for you to study.

Print several copies of these tables and fill out for each week of study. It is important to stick to your study schedule.

**Weekly Study Plan for Week of:** \_\_\_\_\_

|       | Area of Study 1 | Area of Study 2 | Area of Study 3 | Area of Study 4 | Area of Study 5 | Area of Study 6 |
|-------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Mon.  |                 |                 |                 |                 |                 |                 |
| Tues. |                 |                 |                 |                 |                 |                 |
| Wed.  |                 |                 |                 |                 |                 |                 |
| Thu.  |                 |                 |                 |                 |                 |                 |
| Fri.  |                 |                 |                 |                 |                 |                 |
| Sat.  |                 |                 |                 |                 |                 |                 |
| Sun.  |                 |                 |                 |                 |                 |                 |

**Study Time Table for Week of:** \_\_\_\_\_

|                       | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|-----------------------|--------|---------|-----------|----------|--------|----------|--------|
| 8:00 AM - 9:00 AM     |        |         |           |          |        |          |        |
| 9:00 AM - 10:00 AM    |        |         |           |          |        |          |        |
| 10:00 AM - 11:00 AM   |        |         |           |          |        |          |        |
| 11:00 AM - 12:00 Noon |        |         |           |          |        |          |        |
| 12:00 Noon - 1:00 PM  |        |         |           |          |        |          |        |
| 1:00 PM - 2:00 PM     |        |         |           |          |        |          |        |
| 2:00 PM - 3:00 PM     |        |         |           |          |        |          |        |
| 3:00 PM - 4:00 PM     |        |         |           |          |        |          |        |
| 4:00 PM - 5:00 PM     |        |         |           |          |        |          |        |
| 5:00 PM - 6:00 PM     |        |         |           |          |        |          |        |
| 6:00 PM - 7:00 PM     |        |         |           |          |        |          |        |
| 7:00 PM - 8:00 PM     |        |         |           |          |        |          |        |

## Resources - Websites

---

Study information can be drawn from a variety of sources. A sample list of study materials (websites and books) is provided below. These and other helpful resources may be found in a local college bookstore, on the internet, or at your place of employment. You may also be able to borrow them from an apprentice or journeyman in your trade.

### Study Strategies and Exam Preparation Guide

The *Study Strategies & Exam Preparation Guide* is meant to be used in conjunction with this study guide. It provides direction and information on such areas as study habits, test preparation and test taking techniques.

Exam Preparation Guide website: [www.aesl.gov.nl.ca/app/publications/exam\\_prep\\_guide.pdf](http://www.aesl.gov.nl.ca/app/publications/exam_prep_guide.pdf)

### Plan of Training (POT)

A *Provincial Plan of Training* details the full scope of learning for a particular occupation, including both technical training competencies and industry experiences necessary to write an IP Red Seal exam (and complete the requirements for Red Seal Certification), or to write a provincial examination. The Plan of Training is based on the NOA.

POT Website: [www.aesl.gov.nl.ca/app/plans.html](http://www.aesl.gov.nl.ca/app/plans.html)

### Red Seal Website

**National Occupational Analysis** - The NOA is a document used for Red Seal trades that describes the knowledge and abilities required by a fully competent tradesperson working in that trade. The content for the IP exam is based on the NOA.

Red Seal Website: [www.red-seal.ca](http://www.red-seal.ca)

### Machinist PRACTICE Exam

This is **NOT** an IP exam. This is a practice exam provided by the Inter-provincial Standards Red Seal program. It was developed using similar question types to that of a Red Seal exam. The exam is intended to be used for self-assessment in preparation for writing an IP Exam.

Sample questions can be found at:

[www.red-seal.ca/s.1mpl.2.2x.1mQ.5.2st.3.4ns-eng.html?tid=139](http://www.red-seal.ca/s.1mpl.2.2x.1mQ.5.2st.3.4ns-eng.html?tid=139)

### Glossary of Terms

The Red Seal website also lists a Glossary of Terms which will be helpful in preparing for your IP exam:

[www.red-seal.ca/trades/machinists/2013n.4.1\\_.1ppb\\_gl.4ss.1ry-eng.html](http://www.red-seal.ca/trades/machinists/2013n.4.1_.1ppb_gl.4ss.1ry-eng.html)

## Resources – Book List

---

The books listed below are sorted according to NOA blocks as referenced throughout this study guide. You can use this list to help you obtain information on specific topics. It is not necessary to use these books specifically, as you may find others that will be equally beneficial.

| Book  | Block A | Block B | Block C | Block D | Block E | Block F | Block G | Block H |
|---|---------|---------|---------|---------|---------|---------|---------|---------|
| Technology of Machine Tools, 7 <sup>th</sup> edition                                  | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       |
| Interpreting Engineering Drawings, 5 <sup>th</sup> edition { <i>Part of Block A</i> } | ✓       |         |         |         |         |         |         |         |
| Machining Fundamentals, 8 <sup>th</sup> edition                                       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       | ✓       |

**If you wish to obtain any of the resources listed above, here is the reference information:**

- Technology of Machine Tools*, 7<sup>th</sup> edition, McGraw-Hill, Gill, Krar, and Smid, ISBN 978-0078010514
- Interpreting Engineering Drawings*, 5<sup>th</sup> edition, Nelson Canada, Jenson, ISBN 0176501991
- Machining Fundamentals*, 8<sup>th</sup> edition, Goodheart-Wilcox, 2004, Walker, J.R., ISBN 10-1590702492, 13-978-1590702499



## Disclaimer

Various external resources (websites, textbooks) have been listed in this study guide to assist an individual in preparing to write an IP Red Seal Exam. This does not mean the Department of Advanced Education, Skills and Labour, Newfoundland and Labrador endorses the material or that these are recommended as the best resources. There may be other resources of equal or greater value to an individual preparing for an IP Red Seal exam. The Department of Advanced Education, Skills and Labour has no control over the content of external textbooks and websites listed, and no responsibility is assumed for the accuracy of the material.

## Conclusion

---

We hope this guide has provided you with some useful tools as you prepare for your IP Red Seal exam. If you have any questions regarding your IP Red Seal exam please contact your regional office (*see Appendix A for a list of regional offices*).

We appreciate your comments and feedback regarding the usefulness of this study guide. If you have any comments or suggestions, we welcome your feedback. The feedback form at the end of this guide can be used for this purpose.

## Appendix A: Regional Offices

---

If you have any questions regarding your IP Red Seal exam, please contact one of the following regional offices:

Department of Advanced Education, Skills and Labour  
Apprenticeship and Trades Certification Division  
Toll Free: 1-877-771-3737  
[www.aesl.gov.nl.ca/app/contact.html](http://www.aesl.gov.nl.ca/app/contact.html)

| Corner Brook  |
|---|
| 1-3 Union Street<br>Aylward Building, 2 <sup>nd</sup> Floor<br>Corner Brook, NL A2H 5M7 |
| Telephone: (709) 637-2366<br>Facsimile: (709) 637-2519                                  |

| Grand Falls-Windsor                                    |
|--|
| 42 Hardy Avenue<br>Grand Falls-Windsor, NL<br>A2A 2J9  |
| Telephone: (709) 292-4215<br>Facsimile: (709) 292-4502 |

| Clarenville  |
|--|
| 45 Tilley's Road<br>Clarenville, NL<br>A5A 1Z4         |
| Telephone: (709) 466-3982<br>Facsimile: (709) 466-3987 |

| St. John's  |
|---|
| P.O. Box 8700<br>1170 Topsail Road<br>Mount Pearl, NL A1B 4J6 |
| Telephone: (709) 729-2729<br>Facsimile: (709) 729-5878        |

| Happy Valley – Goose Bay  |
|---|
| 163 Hamilton River Road<br>Bursey Building<br>Happy Valley – Goose Bay, NL<br>A0P 1E0 |
| Telephone: (709) 896-6348<br>Facsimile: (709) 896-3733                                |

## **Appendix B: Calculator Use**

---

The picture below shows a calculator with the same functions as the one you will be provided with during your exam. It is advisable to borrow or purchase one with similar functions so that you can familiarize yourself with it before you write your exam.



# Appendix C: Answer Sheet Example

With your exam you will be given an answer sheet like the one below. When answering multiple choice questions be sure to fill the circle completely and fill the circle that corresponds to the question on the exam.

Dual readhead scanner  required  to score this sheet

KEY ID  
A B C D

SCORING & PRINTING OPTIONS:  
 RESCORE  MULTIPLE ANSWER SCORING  
 This sheet always uses the "Total Only" scoring option.

1 T F 1 A B C D E 26 T F 26 A B C D E 51 T F 51 A B C D E 76 T F 76 A B C D E  
 2 A B C D E 27 A B C D E 52 A B C D E 77 A B C D E  
 3 A B C D E 28 A B C D E 53 A B C D E 78 A B C D E  
 4 A B C D E 29 A B C D E 54 A B C D E 79 A B C D E  
 5 A B C D E 30 A B C D E 55 A B C D E 80 A B C D E  
 6 A B C D E 31 A B C D E 56 A B C D E 81 A B C D E  
 7 A B C D E 32 A B C D E 57 A B C D E 82 A B C D E  
 8 A B C D E 33 A B C D E 58 A B C D E 83 A B C D E  
 9 A B C D E 34 A B C D E 59 A B C D E 84 A B C D E  
 10 A B C D E 35 A B C D E 60 A B C D E 85 A B C D E  
 11 A B C D E 36 A B C D E 61 A B C D E 86 A B C D E  
 12 A B C D E 37 A B C D E 62 A B C D E 87 A B C D E  
 13 A B C D E 38 A B C D E 63 A B C D E 88 A B C D E  
 14 A B C D E 39 A B C D E 64 A B C D E 89 A B C D E  
 15 A B C D E 40 A B C D E 65 A B C D E 90 A B C D E  
 16 A B C D E 41 A B C D E 66 A B C D E 91 A B C D E  
 17 A B C D E 42 A B C D E 67 A B C D E 92 A B C D E  
 18 A B C D E 43 A B C D E 68 A B C D E 93 A B C D E  
 19 A B C D E 44 A B C D E 69 A B C D E 94 A B C D E  
 20 A B C D E 45 A B C D E 70 A B C D E 95 A B C D E  
 21 A B C D E 46 A B C D E 71 A B C D E 96 A B C D E  
 22 A B C D E 47 A B C D E 72 A B C D E 97 A B C D E  
 23 A B C D E 48 A B C D E 73 A B C D E 98 A B C D E  
 24 A B C D E 49 A B C D E 74 A B C D E 99 A B C D E  
 25 A B C D E 50 A B C D E 75 A B C D E 100 A B C D E

ANSWER KEY INFO.  
# OF KEYS  
ITEM COUNT

|   |   |   |   |
|---|---|---|---|
| 0 | 0 | 0 | 2 |
| 1 | 1 | 1 | 3 |
| 2 | 2 | 2 | 4 |
| 3 | 3 |   |   |
| 4 | 4 |   |   |
| 5 | 5 |   |   |
| 6 | 6 |   |   |
| 7 | 7 |   |   |
| 8 | 8 |   |   |
| 9 | 9 |   |   |

PERFORMANCE ASSESSMENT  
% OF TOTAL SCORE (00 = 100%)

|   |   |   |   |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 |
| 2 | 2 | 2 | 2 |
| 3 | 3 | 3 | 3 |
| 4 | 4 | 4 | 4 |
| 5 | 5 | 5 | 5 |
| 6 | 6 | 6 | 6 |
| 7 | 7 | 7 | 7 |
| 8 | 8 | 8 | 8 |
| 9 | 9 | 9 | 9 |

Bar Code

|                 |  |
|-----------------|--|
| NUMBER CORRECT  |  |
| PERCENT CORRECT |  |
| ROSTER NUMBER   |  |
| SCORE           |  |
| RESCORE         |  |

|                          |  |
|--------------------------|--|
| COMBINED POINTS EARNED   |  |
| COMBINED PERCENT CORRECT |  |
| LETTER GRADE             |  |
| SCORE                    |  |
| RESCORE                  |  |

200 ITEM

MARKING INSTRUCTIONS  
Use a No. 2 Pencil  
Fill oval completely  
Erase cleanly

STUDENT ID NUMBER

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |

NAME \_\_\_\_\_  
SUBJECT \_\_\_\_\_  
PERIOD \_\_\_\_\_ DATE \_\_\_\_\_

## Feedback Form Study Guide – Machinist

Please answer the following:

---

- (1) This Study Guide is a useful tool for exam preparation.  
 strongly agree     agree     disagree     strongly disagree
- (2) The topics contained in the guide are arranged in a logical order.  
 strongly agree     agree     disagree     strongly disagree
- (3) The design and format of the guide caught my attention.  
 strongly agree     agree     disagree     strongly disagree
- (4) The instructions throughout the guide are clear and to the point.  
 strongly agree     agree     disagree     strongly disagree
- (5) The resources listed in this guide are suitable and valuable.  
 strongly agree     agree     disagree     strongly disagree
- (6) The guide should contain more information.  
 strongly agree     agree     disagree     strongly disagree

Suggested information/resources to include:

---

---

---

Additional Comments:

---

---

---

**Please complete this form and return via fax or mail to the following:**

Department of Advanced Education, Skills and Labour  
Apprenticeship and Trades Certification Division  
Standards and Curriculum Unit  
45 Tilley's Road, Clarenville, NL A5A 1Z4  
Fax: (709) 466-3987

