Technology Education Classes

Skills That Get Jobs!

Technology Education at Burnaby North

Technology is a dominant force in today's society. Technological literacy is as essential to participation in modern society as is numeracy and the ability to read and write. A technologically literate person uses tools, materials, systems, and processes in an informed, ethical, and responsible way. Technology education helps young people prepare to live and work in a technological world.

The aim of the Technology Education program is to help students develop the technological literacy that they need to live and work effectively in a changing technological society. To achieve this, the curriculum provides a framework for students to learn how to design and make solutions to real-world problems.

To meet career challenges, students must be able to make independent decisions, solve problems, work independently and co-operatively with others, and become technically competent. Technology education helps students develop the types of learning patterns that are required in today's changing workplace. The Technology Education department offers a wide variety of courses to accommodate the many interests and needs of Burnaby North students.

At Burnaby North, we offer classes in automotive, autobody, woodwork, drafting and electronics. Burnaby North is the only school in the Burnaby School District to offer a class in Autobody.
This booklet provides an outline of each class.

Teachers

- **A. Rodin** teaches Tech 9/10, Power Mechanics, Autobody, and Tech 8
- **E. Smith** teaches Auto Mechanics, Tech 9/10, and Tech 8
- **D. Watts** teaches Drafting, Tech 9/10, and Tech 8
- **S. Mah** teaches Electronics, and Tech 8
- **K. Duncan** teaches Woodwork, Creative Wood and Metal, and Tech 8

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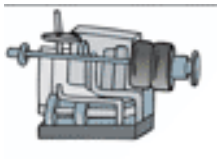


Automotive Program

Power Mechanics 9/10 **#2860**

- This is an introductory course to power mechanics.
- Students gain experience with all hand tools and basic engine principals.
- Students gain an understanding, through theory and hands-on practical work. Students will rebuild a small gas engine.
- CO2 car dragster competition. Wood and metal race cars.
- Students design, build, and test monster trucks.

Technology 9/10 **#2880**

- This course is an extension and enhancement to applied skills 8.
- Students will design and build the following projects: cyborg mask, earthquake shaker, electronics project, sumo robot cars, robot arm, woodwork project and design projects.

Automotive Technology 10 **#9580**

- Students are introduced to basic automotive systems including: engine fundamentals, cooling, charging, starting, and servicing.
- Students also gain independent problem solving skills when competing shop assignments, labs, and extra curricular mini-chopper motor bike.
- Students will learn to operate the hoist, brake lathe, tire machine, wheel balancer, test equipment, and computer data system.

Automotive Technology 11 **#4850**

- A basic course in automotive technology.
- Students gain practical experience and basic skill development working with automobiles.
- Hands on work with automotive repairs.
- This course introduces students to a variety of automotive systems including: tune-up procedures, brake servicing, and engine performance and tune up.

Automotive Technology 12 #5850

- This course gives students an in-depth look at engine management systems, computer control, problem diagnosis, problem solving, repair, and service of modern automobiles.
- Hands-on practical work with safety related supervised instruction is emphasized.

Automotive Technology 12: Engine and Drive Train #5852

- This course provides students with opportunities to develop abilities to safely use specialized tools and computerized equipment necessary to diagnose service and maintain the engine.
- Students will disassemble and assemble a running V-8 engine.
- As well as the automobile engine, students gain skills in repairing and servicing drive train mechanisms.

Autobody 11 / 12 #9583 (11) and #9586 (12)

- Students will get an overview of all the skills and safety involved in the autobody industry.
- Burnaby North is the only school in Burnaby that has this program, and many students find employment in this field. Winner of Skills Canada BC.
- Learn how to mig and arc weld, and use a cutting torch.
- Learn how to repair sheet metal, dents, and use autobody fillers.
- Core projects include: panel, fenders, doors, rust repair, polishing clear coat working on cars, and restoration of old cars.
- Learn how to restore a custom hot rod.
- Grade 12 students learn how to prepare and paint cars with base coat clear coat.
- VCC work place training with college credit.

What the future holds…

- Careers that require automotive skills include:
    - The automotive technician
    - Automotive service manager
    - Autobody career and future job with ICBC
    - Autobody Manager or Product Rep
    - Automotive Diagnostic Technician
    - Commercial transport and Marine industry

Woodworking Program

Woodwork 9 **#2820**

- Students work together to create a variety of small projects such as; a picture frame, step stool, coat rack and/or table.
- Students will develop a basic knowledge of many facets of woodworking including design, joinery, machine safety, and finishing.

Woodwork 10 **#3880**

- Students will build on the skills learned in Woodworking 9 or begin developing skills.
    - Several smaller projects will be constructed including; a picture frame, step stool, coat rack and/or table.
    - Or students may choose a major project. This may include a night stand, Adirondack chair, headboard and/or book case. The possibilities are endless!
- Students will develop further knowledge of many aspects of woodworking including design, joinery, machine safety, and finishing.

Creative Wood and Metal **#9462**

- Students will use wood, metal and glass to create jewelry and other accessories such; stained glass windows, metal rings, and wood carvings.
- Creative Wood and Metal history and design will be explored.
- Students will develop a basic knowledge of many facets of woodworking including design, joinery, machine safety, and finishing.

Carpentry and Joinery 11 #4882

- Students will develop the ability to safely use a variety of hand and machine tools.
- Students will learn how to produce a variety of different joinery and they will learn the appropriate applications for each one.
- Students will work with the teacher to design and develop a project of their choice. Students in the past have made beds, night stands, desks, dressers, guitars, book cases, and dog houses. The possibilities are endless!

Carpentry and Joinery 12: Cabinet Construction #5887

- Students will develop the ability to safely use a variety of hand and machine tools.
- Students will learn how to produce a variety of different joinery and they will learn the appropriate applications for each one.
- Students will learn the procedures and techniques used to build both frame and flush face construction.

Carpentry and Joinery 12: Construction #5880

- Students will develop the ability to safely use a variety of hand and machine tools.
- Students will learn how to produce a variety of different joinery and they will learn the appropriate applications for each one.
- Students will learn about the history and design of furniture construction.
- Students will design and construct a piece of furniture using appropriate joinery techniques.

What the future holds…

- Careers that require woodworking skills include:
    - Carpentry
    - Woodworkers and Cabinet Makers
    - Furniture Finishers
    - Furniture and Industrial Designers

Drafting Program

Drafting 9 **#2820**

- Students will explore basic drafting that will demonstrate architectural, mechanical and computer aided design (CAD) and model construction.
- Students will produce a sign on the CNC router, design and make t-shirts, with the t-shirt press
- A great course for all students interested in engineering and interior design.

Drafting 10 **#3820**

- This course covers basic drafting techniques including pictorial drawings, orthographic projection, dimensioning, and geometric construction projects.
- The theoretical part of this course is incorporated in the drawings on a continuous basis.
- All drawings are CAD generated.

Drafting and Design 11 **#4824**

- This course provides students with opportunities to develop their abilities to apply drafting and design concepts through a practical, hands-on learning, environment and the extensive use of CAD based application programs.
- Projects include: CNC router, 3D artifacts.

Drafting and Design 12 **#5824**

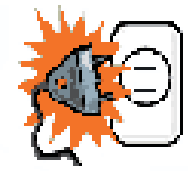
- Provides students with the opportunity to build on the concepts learned in Drafting 11.
- There will be an opportunity to work on activities in an area that interests students. Professional standards and high quality are emphasized at all stages of project construction.

Drafting and Design 12: Engineering #5824

- Students are introduced to mechanical engineering concepts. They will build onto the skills developed in Drafting 11 and 12.
- Complex design and production of projects using the CNC Router.
- Drawings will be produced by AutoCAD, and Envisioner 3D Software.
- Evaluation of mechanical units and various manufacturing processes are examined.
- This is an excellent introductory engineering course that former students have commented on favorably while working on post secondary studies.
- Students will develop designs relating to architecture, study the standards and conventions required, use reference material to design for loads and ergonomics, and be informed of employment potential to this field.
- Projects include: CNC router, model restaurant, and model buildings.

What the future holds…

- Careers that require drafting skills include:
    - Engineers
    - Interior designers
    - Architects
    - Industrial Designers



Electronics Program

Electronics 9 **#2840**

- This course covers basic electronic concepts, including circuits, schematics, electronic test equipment and measurement.
- Students will construct electronic projects such as strobe lights, electronic games, toys, alarms, timers, motion detectors and amplifiers.

Electronics 10 **#3840**

- Students will work to develop technological skills that have real value.
- They will build electronic systems, power supplies and audio equipment.
- Students will use computers for graphics, computer-assisted design, (CAD) presentation, design of project circuit boards and project enclosures.

Electronics 11 **#4842**

- Covers basic electronic concepts in both analog and digital circuits.
- Students will construct a variety of designs and apply them to selected projects.
- An introduction to programming micro-controllers using BASIC and assembly language is used.

Electronics 12 **#5842**

- Offers basic electronic concepts in both analog and digital circuits. Students will construct a variety of project designs and will be encouraged to apply circuit design to a chosen application
- An introduction to programming micro controllers using BASIC and assembly language is included. Emphasis will be placed on employment opportunities available in the field.

What the future holds…

- Careers that require electronic skills include:
    - Electrical Engineering
    - Broadcast Technician
    - Certified Electronics Technician
    - Telecommunications Technician

Tech Ed

"Learn skills that get jobs!"