Board/Authority Authorized Course Framework Template

School District/Independent School Authority Name: CHILLIWACK	**School District/Independent School Authority Number (e.g. SD43, Authority #432):** SD33
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School Name: SARDIS SECONDARY, CHILLIWACK SECONDARY	**Principal's Name:** DAN HIESLER, BRIAN FEHLAUER
Superintendent Approval Date (for School Districts only):	**Superintendent Signature (for School Districts only):**
Board/Authority Approval Date:	**Board/Authority Chair Signature:**
Course Name: AUTO BODY 12	**Grade Level of Course:** 12
Number of Course Credits: 4	**Number of Hours of Instruction:** 120

Board/Authority Prerequisite(s): AUTOMOTIVE 12

Special Training, Facilities or Equipment Required: AUTO SHOP, BODY WORK TOOLING

Course Synopsis: This course has been developed to support employment opportunities in the automotive industry. Students will expand their learning and skills from the Auto 11 and 12 courses. Learning Outcomes for the course are grouped into eight major topics: Safety, hand tools, oxyacetylene, MIG welding, abrasives, plastic fillers, major damage analysis, final prep and cleaning, and refinishing materials. The Auto Collision industry is in demand for young apprentices. Many students gain employment from this course by attending workplace training and continuing on at the University of the Fraser Valley or other Post-Secondary Institutions. Students in the Auto body 12 course will mainly focus of the refinishing of the Automobile. Students will learn how prep and paint panels as well as hone their skills in sheet metal fabrication and repair.

Goals and Rationale:

Goals – Students will:

- Develop an understanding and appreciation of safe work practices, individual rights, and responsibilities in the workplace.
- Develop student awareness of environmental impacts, and innovations centered around environmental protection.
- Improve skills in areas defined in the synopsis.
- Demonstrate procedures that would be beneficial to care, maintenance, and resale of vehicles.
- Gain industry experience through guest speakers and WEX.
- Develop an understanding of the provincial insurance industry.

Aboriginal Worldviews and Perspectives: This course employs many attributes found within the Aboriginal Connectedness and Relationship Document. Foremost, this is an experienced based course, with 80 percent of the content being hands-on knowledge and skill development and exploration (*Experiential Learning*). There are opportunities for students to explore their own creative design (*A Positive Learner-Centered Approach*), for example students can utilize cultural symbols within the class; such as using a stencil design on their core projects. Within the structure of the course, peer mentorship is encouraged through verbal communication, often with senior students who have taken this course before (*Flexibility - scheduling, program/course configuration, grouping)*. Although this is a classroom/shop based course – there is an open discussion and reflection on the impact and changes to the transportation industry on the world. Topics may include alternative energy vehicles and alternate substrates used to reduce the weight of vehicles to improve fuel mileage, as in the new F150 truck bed.

Course Name: **Grade:**

BIG IDEAS

Vehicle operation, service, and maintenance include consideration of **social and environmental impacts**.	Personal service and maintenance interests require the evaluation and refinement of skills.	Tools and **technologies** can be adapted for specific purposes.

Learning Standards

Curricular Competencies	Content
Students are expected to do the following: **Applied Design** • Engage in a period of research and empathetic observation in order to understand design opportunities **Defining** • Choose a design opportunity • Identify potential users and relevant contextual factors • Identify criteria for success, intended impact, and any constraints **Ideating** • Take creative risks in generating ideas and add to others' ideas in ways that enhance them • Screen ideas against criteria and constraints • Critically analyze and prioritize competing factors, including social, ethical, and sustainability considerations, to meet community needs for preferred futures • Choose an idea to pursue, keeping other potentially viable ideas open	*Students are expected to know the following:* • General shop safety and orientation • Use of proper safety equipment (Respirator with proper particle and vapor cartridges), safety googles, and hear protection. • WHMIS (Workplace Hazardous Materials Information System) Orientation and evaluation. • Basic hand and power identification. • Basic measurement skills in imperial and metric systems that related to Auto Collision. • Basic fasteners in imperial and metric systems in relationship to the Auto Collision industry. • Proper set up and shut down procedures for oxy-acetylene welding and M.I.G Welding equipment. • Produce different weld types (Butt, Edge, Lap) • Identification of types of materials or substrates (including steel, aluminum and plastic). • Auto Body terminology in basic dent repair. • Auto Body terminology in refinishing.

Prototyping

- Identify and use sources of inspiration and information
- Choose a form for prototyping and develop a plan that includes key stages and resources
- Evaluate a variety of materials for effective use and potential for reuse, recycling, and biodegradability
- Prototype making changes to tools, materials, and procedures as needed
- Record iterations of prototyping

Testing

- Identify sources of feedback.
- Develop an appropriate test of the prototype.
- Conduct the test, collect and compile data, evaluate data, and decide on changes.
- Iterate the prototype or abandon the design idea.

Making

- Identify and use appropriate tools, technologies, materials, and processes for production.
- Make a step-by-step plan for production and carry it out, making changes as needed.
- Use materials in ways that minimize waste.

Sharing

- Decide on how and with whom to share their product and processes.
- Demonstrate their product to potential users, providing a rationale for the selected solution, modifications, and procedures, using appropriate terminology.
- Critically evaluate the success of their product, and explain how their design ideas contribute to the individual, family, community, and/or environment.
- Critically reflect on their design thinking and processes, and evaluate their ability to work effectively both as individuals and collaboratively in a group, including their ability to share and maintain an efficient cooperative work space.
- Identify new design issues.

- Historical and potential future impact of energy, power, and transportation systems on society and the environment.

Applied Skills • Demonstrate an awareness of precautionary and emergency safety procedures in both physical and digital environments. • Identify the skills and skill levels needed, individually or as a group, in relation to specific projects, and develop and refine them as needed. **Applied Technologies** • Choose, adapt, and if necessary learn about appropriate tools and technologies to use for tasks. • Evaluate the personal, social, and environmental impacts, including unintended negative consequences, of the choices they make about technology use • Evaluate how the land, natural resources, and culture influence the development and use of tools and technologies	

Big Ideas – Elaborations

- **social and environmental impacts:** including operator and public safety; emissions and effects on the environment; manufacturing, packaging, disposal, and recycling considerations related to vehicle parts and products
- **technologies:** tools that extend human capabilities

Curricular Competencies – Elaborations

- **research:** seeking knowledge from other people as experts (e.g., First Peoples Elders), secondary sources, and collective pools of knowledge in communities and collaborative atmospheres
- **empathetic observation:** aimed at understanding the values and beliefs of other cultures and the diverse motivations and needs of different people
- **Defining:** setting parameters
- **constraints:** limiting factors such as task or user requirements, materials, expense, environmental impact, issues of appropriation, and knowledge that is considered sacred
- **Ideating:** forming ideas or concepts
- **sources of inspiration:** may include experiences; traditional cultural knowledge and approaches, including those of First Peoples; places, including the land and its natural resources and analogous settings; and people, including users, experts, and thought leaders
- **plan:** for example, pictorial drawings, sketches, flow charts
- **iterations:** repetitions of a process with the aim of approaching a desired result
- **sources of feedback:** may include peers; users; keepers of traditional cultural knowledge and approaches, including those of First Peoples; and other experts
- **appropriate test:** consider conditions, number of trials
- **technologies:** things that extend human capabilities
- **share:** may include showing to others, use by others, giving away, or marketing and selling
- **product:** for example, a physical product, a process, a system, a service, or a designed environment

Content – Elaborations

Content – Elaborations

Recommended Instructional Components:

Theory topics are discussed one to three periods at a time depending on the topic and time. The following text is used: Autobody Repair and Refinishing by John W. Hogg. Topics are in conjunction with text chapters:

1. Hand Tools - Chapter 2
2. Fibreglass Molding and Repair – Chapter
3. Welding - Chapters 7 & 8
4. Expansion, Contraction, Heat Distortion and Shrinking - Chapter 9
5. Sheet Metal Damage and Repair, Panel Forming Techniques - Chapters 4 & 10.
6. Surface Preparation and Plastic Fillers - Chapters 5 & 14
7. Spray Equipment and Spray Gun Techniques - Chapters 16 & 17.
8. Refinishing Materials - Chapter 15
9. Exterior and Interior Cleaning - Chapter 17.

The program of shop work is more flexible than the theory periods in that the jobs do not follow a definite pattern at any time. However, all students must complete certain Practical Outcomes. There will be various types of work being done. Although, any task performed that is related to a recent theory topic is advantageous to that student. Arrangements can be made for almost any job in which a student is interested. Once a job is chosen, the student will be expected to remain on that job until it is completed. However, if scheduled repairs are unavailable, other activities can be done, i.e., smaller shop projects in progress, single body components, or in some cases scrap.

Recommended Assessment Components: Ensure alignment with the Principles of Quality Assessment

There are four major areas of assignments that will be considered. Each area will constitute a percentage of your grade each term. Final grades are weighted 40% for term 1 and 60% for term 2.

These areas are Shop Practices 20%, Tests 20%, Assignments 20%, Practical Outcomes 40%

SHOP PRACTICES

All jobs are regarded as a learning experience, including maintenance of tools and equipment and shop clean up. In all areas, students are expected to cooperate with each other and with instructors. Evaluation is based on criteria in the following areas; Safe work habits, Accountability, Teamwork/Leadership Skills.

ASSIGNMENTS

Assignments for this part of the grade are written assignments given out at the end of each theory section. Due dates vary from one to two weeks and are not to be completed during practical shop periods. Assignment work is homework that must be completed on the students own time.

TEXTS AND EXAMS

Written tests will be an indication of the students' progress, as well as a learning process. A quiz will be given at the end of each theory section and will be discussed at the same class. A final exam will be given at the end of the course. This exam is entered as 20% of your final term mark.

PRACTICAL OUTCOMES

This section is based on Practical Outcomes and is evaluated by the completion of prescribed tasks. The level of achievement is based on additional tasks completed in the shop that may not be prescribed Outcomes. Updating the Practical Outcome Sheet and one's journal is essential for the above evaluation.

Learning Resources:

There is no formal textbook to accompany this course. Course material will be composed from various Auto Body text books, compiled Auto Body videos and you tube clips.

Additional Information:

Careers in Auto Body have become more and more lucrative as repair costs have soared. There are incredible opportunities for young men and women in the industry as favour is given to those who give extra attention to detail. As a base case for usable knowledge each student will learn advanced care strategies for vehicles they may own and wish to keep looking new. Overall the course offers a start for those who may take interest as a career and practical knowledge for those looking to increase their skill and knowledge.