

CURRICULUM ALIGNMENT – Transporting Nuclear Materials

Alberta

| Grade | Course Name and Number | Unit | Outcome |
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| 7 | Grade 7 Science | Unit D: Structure and Forces (Science and Technology Emphasis) | Specific Outcome 1.5: Identify points of failure and modes of failure in natural and built structures. |
| 7 | Grade 7 Science | Unit D: Structure and Forces (Science and Technology Emphasis) | General Outcome 2: Investigate and analyze forces within structures, and forces applied to them. |
| 7 | Grade 7 Science | Unit D: Structure and Forces (Science and Technology Emphasis) | Specific Outcome 2.3: Identify tension, compression, shearing and bending forces within a structure; and describe how these forces can cause the structure to fail. |
| 7 | Grade 7 Science | Unit D: Structure and Forces (Science and Technology Emphasis) | Specific Outcome 2.4: Analyze a design and identify properties of materials that are important to individual parts of the structure. |
| 7 | Grade 7 Science | Unit D: Structure and Forces (Science and Technology Emphasis) | General Outcome 4: Demonstrate and describe processes used in developing, evaluating and improving structures that will meet human needs with a margin of safety. |
| 7 | Grade 7 Science | Unit D: Structure and Forces (Science and Technology Emphasis) | Specific Outcome 4.1: Demonstrate and describe methods to increase the strength of materials through changes in design. |
| 7 | Grade 7 Science | Unit D: Structure and Forces (Science and Technology Emphasis) | Specific Outcome 4.2: Identify environmental factors that may affect the stability and safety of a structure and describe how these factors are taken into account. |
| 7 | Grade 7 Science | Unit D: Structure and Forces (Science and Technology Emphasis) | Specific Outcome 4.3: Analyze and evaluate a technological design or process on the basis of identified criteria, such as costs, benefits, safety and potential impact on the environment. |
| 7 | Grade 7 Science | Unit D: Structure and Forces (Science and Technology Emphasis) | Skill Outcome (Initiating and Planning): Identify practical problems |
| 7 | Grade 7 Science | Unit D: Structure and Forces (Science and Technology Emphasis) | Skill Outcome (Initiating and Planning): Propose alternative solutions to a practical problem, select one, and develop a plan. |
| 7 | Grade 7 Science | Unit D: Structure and Forces (Science and Technology Emphasis) | Skill Outcome (Initiating and Planning): Select appropriate methods and tools for collecting data to solve problems. |
| 7 | Grade 7 Science | Unit D: Structure and Forces (Science and Technology Emphasis) | Skill Outcome (Performing and Recording): Use tools and apparatus safely. |

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| 7 | Grade 7 Science | Unit D: Structure and Forces (Science and Technology Emphasis) | Skill Outcome (Analyzing and Interpreting): Test the design of a constructed device or system. |
| 7 | Grade 7 Science | Unit D: Structure and Forces (Science and Technology Emphasis) | Skill Outcome (Analyzing and Interpreting): Evaluate designs and prototypes in terms of function, reliability, safety, efficiency, use of materials and impact on the environment. |
| 7 | Grade 7 Science | Unit D: Structure and Forces (Science and Technology Emphasis) | Skill Outcome (Analyzing and Interpreting): Identify and correct practical problems in the way a prototype or constructed device functions. |
| 7 | Grade 7 Science | Unit D: Structure and Forces (Science and Technology Emphasis) | Skill Outcome (Communication and Teamwork): Communicate questions, ideas, intentions, plans and results, using lists, notes in point form, sentences, data tables, graphs, drawings, oral language, and other means. |
| 7 | Grade 7 Science | Unit D: Structure and Forces (Science and Technology Emphasis) | Skill Outcome (Communication and Teamwork): Work cooperatively with team members to develop and carry out a plan and troubleshoot problems as they arise. |
| 10 | Course DES1020 | The Design Process | Outcome 1: Identify the steps in the design process. |
| 10 | Course DES1020 | The Design Process | Specific Outcome 1.1: Recognize and apply the components of the design process, including: <ul style="list-style-type: none"> • 1.1.1 identifying the problem or need (design brief) • 1.1.2 researching the problem • 1.1.3 generating ideas and visualizing potential solutions • 1.1.4 choosing the best solution • 1.1.5 choosing the best method of presentation • 1.1.6 making or modelling a solution • 1.1.7 presenting the solution • 1.1.8 evaluating the solution |
| 10 | Course DES1020 | The Design Process | Outcome 2: Apply the steps in the design process through production of a designed solution. |
| 10 | Course DES1020 | The Design Process | Specific Outcome 2.1: Follow the design process to create solutions for one or more 2-D or 3-D projects. |
| 10 | Course DES1020 | The Design Process | Specific Outcome 2.2: Select and use appropriate tools and materials as outlined in the design brief. |
| 10 | Course | The Design Process | Specific Outcome 2.3: Effectively communicate intentions and decision making related |

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| | DES1020 | | to the design project; e.g. form, function, aesthetics. |
| 10 | Course DES1020 | The Design Process | Outcome 3: Present a portfolio-ready drawing, rendering or model that the student produced. |
| 10 | Course DES1020 | The Design Process | Specific Outcome 3.1: Present sketches, drawings and/or models for assessment. |
| 10 | Course DES1020 | The Design Process | Specific Outcome 3.2: Maintain a design folder, journal or sketchbook as part of the portfolio of ongoing observational drawing and modelling activities. |
| 10 | Course DES1020 | The Design Process | Outcome 6: Demonstrate basic competencies. |
| 10 | Course DES1020 | The Design Process | Specific Outcome 6.1: Demonstrate fundamental skills to: <ul style="list-style-type: none"> • 6.1.1 communicate • 6.1.2 manage information • 6.1.3 use numbers • 6.1.4 think and solve problems |
| 10 | Course DES1020 | The Design Process | Specific Outcome 6.3: Demonstrate teamwork skills to: <ul style="list-style-type: none"> • 6.3.1 work with others • 6.3.2 participate in projects and tasks |
| 10 | Course DES1040 | 3-D Design 1 | Outcome 1: Identify and practice 3-D design techniques within the parameters of a design brief to appropriate scale; e.g. process, production and presentation. |
| 10 | Course DES1040 | 3-D Design 1 | Specific Outcome 1.2: Demonstrate various techniques to provide design solutions; e.g. packaging, garment, architectural model. |
| 10 | Course DES1040 | 3-D Design 1 | Outcome 2: Identify and use tools and materials common to 3-D design; e.g. modelling software, foam core board, fabric, wood. |
| 10 | Course DES1040 | 3-D Design 1 | Specific Outcome 2.1: Demonstrate basic skills using tools and materials. |
| 10 | Course DES1040 | 3-D Design 1 | Specific Outcome 2.2: Select and use appropriate tools and materials as outlined in the design brief. |
| 10 | Course DES1040 | 3-D Design 1 | Outcome 4: Use 3-D design techniques to solve simple design problems. |

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| 10 | Course DES1040 | 3-D Design 1 | Specific Outcome 4.1: Demonstrate techniques common to 3-D design by: <ul style="list-style-type: none"> • 4.1.1 brainstorming ideas • 4.1.2 manipulating forms and space • 4.1.3 practising basic modelling techniques • 4.1.4 relating materials and techniques |
| 10 | Course DES1040 | 3-D Design 1 | Specific Outcome 4.2: Prepare portfolio-ready product. |
| 10 | Course DES1040 | 3-D Design 1 | Specific Outcome 4.3: Select and solve one or more 3-D design problems using the design process. |
| 10 | Course DES1040 | 3-D Design 1 | Outcome 5: Produce and present a portfolio-ready drawing, image, model, rendering or animation. |
| 10 | Course DES1040 | 3-D Design 1 | Specific Outcome 5.1: Present images or model for assessment. |
| 10 | Course DES1040 | 3-D Design 1 | Specific Outcome 5.2: Maintain a design folder, journal, or sketchbook as part of the portfolio of ongoing observational drawing activities. |
| 10 | Course DES1040 | 3-D Design 1 | Outcome 8: Demonstrate basic competencies. |
| 10 | Course DES1040 | 3-D Design 1 | Specific Outcome 8.1: Demonstrate fundamental skills to: <ul style="list-style-type: none"> • 8.1.1 communicate • 8.1.2 manage information • 8.1.3 use numbers • 8.1.4 think and solve problems |
| 10 | Course DES1040 | 3-D Design 1 | Specific Outcome 8.3: Demonstrate teamwork skills to: <ul style="list-style-type: none"> • 6.3.1 work with others • 6.3.2 participate in projects and tasks |
| 11 | Course DES2045 | 3-D Design 2 | Outcome 1: Plan and produce solutions to 3-D design briefs. |
| 11 | Course DES2045 | 3-D Design 2 | Specific Outcome 1.1: Select and use appropriate tools and materials as outlined in the design brief. |
| 11 | Course | 3-D Design 2 | Specific Outcome 1.1: Apply the design process to solve a 3-D design problem; e.g. |

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| | DES2045 | | software modelling, cutting, joining, bending, measuring. |
| 11 | Course DES2045 | 3-D Design 2 | Outcome 2: Incorporate the elements and principles of design to achieve the design solution. |
| 11 | Course DES2045 | 3-D Design 2 | Specific Outcome 2.1: Apply techniques, tools, materials and other resources in design solution; e.g. tone, texture and colour, markers and paints, images, typeface, drawing, layout, measuring, notation, rendering, assembly drawing, and correct use of tools. |
| 11 | Course DES2045 | 3-D Design 2 | Specific Outcome 2.2: Use mathematical and/or scientific principles as they apply to design projects assigned; e.g. organization of visual space, measurement of internal space, borders, columns, use of scale. |
| 11 | Course DES2045 | 3-D Design 2 | Outcome 3: Present a portfolio-ready drawing, image, or rendering. |
| 11 | Course DES2045 | 3-D Design 2 | Specific Outcome 3.2: Discuss intentions and decision making related to the application of elements and principles of design. |
| 11 | Course DES2045 | 3-D Design 2 | Specific Outcome 3.3: Present images and/or model(s) for assessment. |
| 11 | Course DES2045 | 3-D Design 2 | Specific Outcome 3.4: Maintain a design folder, journal or sketchbook as part of the portfolio of ongoing observational drawing activities that illustrates skill building. |
| 11 | Course DES2045 | 3-D Design 2 | Outcome 6: Demonstrate basic competencies. |
| 11 | Course DES2045 | 3-D Design 2 | Specific Outcome 6.1: Demonstrate fundamental skills to: <ul style="list-style-type: none"> • 6.1.1 communicate • 6.1.2 manage information • 6.1.3 use numbers • 6.1.4 think and solve problems |
| 11 | Course DES2045 | 3-D Design 2 | Specific Outcome 6.3: Demonstrate teamwork skills to: <ul style="list-style-type: none"> • 6.3.1 work with others • 6.3.2 participate in projects and tasks |