

# PRODUCT DESIGN (DEPD)

This is a list of the Product Design (DEPD) courses available at KPU.

## DEPD 1100 3 Credits

### Studio 1: Design Methods

Students will be introduced to properties, potential, and the language of materials. They will learn about the processes of manufacturing and assembly that are used in product design. Students will develop insight into how materials behave and how information and understanding are used to guide design, decision-making in relationship to these materials and processes. They will explore materiality in developing design outcomes through a series of lectures, projects and workshops.

*Attributes: F2A3*

*Transferable (refer to transfer guide)*

## DEPD 1110 3 Credits

### Visualization for Product Design

Students will develop fundamental skills in visualization for product design (sketching, drawing, and rendering). They will apply theories, concepts, methods and materials comprehending how these hand visualization techniques are integral to the design process; how drawing is a means to an end, for example: communicating and analyzing ideas, simplifying complex problems and processes, persuading clients, manufacturers and users, and providing technical information about construction, assembly and use. Students will transfer these visualization skills to project work.

*Attributes: F2A3*

*Transferable (refer to transfer guide)*

## DEPD 1120 3 Credits

### Computer Fundamentals

Students will examine basic computer hardware and software concepts, and the Internet, in relation to product design. They will use word processing and spreadsheet software to develop solutions for design and business problems. Students will explore the 2D and 3D capabilities of using various tools and techniques. They will design and build compositions to create print materials.

This course is similar to FMRK 1105. Students will not be able to earn credits for more than one of FMRK 1105 or DEPDP 1120.

*Attributes: F2A3*

*Transferable (refer to transfer guide)*

## DEPD 1121 3 Credits

### Construction Technologies

Students will learn fundamental techniques and methods of construction technology related to soft materials for applications in product design. They will produce reference samples focusing on technical and production aspects of design projects. Students will become proficient in: industrial sewing techniques, patternmaking methods and applications, and textile selection for a variety of pliable materials, both natural and synthetic.

*Not Transferable*

## DEPD 1130 3 Credits

### Design Thinking

Students will be introduced to a number of strategies related to the design of products, such as methods of rational analysis and synthesis, formal design paradigms drawn from history, strategies for developing concepts, and making products meaningful to user groups. They will be introduced to the relationship of design thinking to the process of design. Students will understand the use of a diverse set of tools deployable within different design contexts or at different stages in the design process. They will use various techniques for exploring and representing design ideas to provide a foundation for future expertise in designing. Students will explore hybrid-thinking models through interdisciplinary actions that will provide a framework for leadership in their discipline.

*Attributes: F2A3*

*Transferable (refer to transfer guide)*

## DEPD 1140 (formerly DEPDP 1210) 3 Credits

### Model Making

Students will apply creative and innovative problem-solving skills to comprehensive three-dimensional design projects focusing on product design, such as sportswear and accessories, protective and safety gear, rescue apparel, uniforms, and shelters. Students will expand their knowledge of materials, processes, and methods as well as three-dimensional modeling and prototyping techniques, along with presentation methods relating to industrial product production.

Note: This course is similar to FIND 1210. Students will not be able to earn credits for more than one of FIND 1210 or DEPDP (1140 or 1210).

*Prerequisites: DEPDP 1100*

*Attributes: F2A3*

*Transferable (refer to transfer guide)*

## DEPD 1210 3 Credits

### Three-Dimensional Design: Product Design

Students will apply creative and innovative problem-solving skills to comprehensive three-dimensional design projects focusing on product design, such as sportswear and accessories, protective and safety gear, rescue apparel, uniforms, and shelters. Students will expand their knowledge of materials, processes, and methods as well as three-dimensional modeling and prototyping techniques, along with presentation methods relating to industrial product production.

This course is similar to FIND 1210. Students will not be able to earn credits for more than one of FIND 1210 or DEPDP 1210.

*Prerequisites: DEPDP 1100*

*Attributes: F2A3*

*Transferable (refer to transfer guide)*

**DEPD 1220 3 Credits****Digital Technologies for Product Design**

Students will learn the fundamentals of digital manufacturing technologies using industry standard software, with a focus on computer-aided design (CAD) for product design. Students will learn to create and develop design ideas from data using three-dimensional modeling software. Students will extend their prior knowledge of computer applications to create and present innovative product designs geared to production. They will develop and explore generative design processes to produce virtual 3D products.

*Prerequisites: DEPD 1120 or 1240*

*Attributes: F2A3*

*Transferable (refer to transfer guide)*

**DEPD 1230 3 Credits****Transformative Thinking for Product Design**

Students will be introduced to the complexities of societal threats and opportunities that affect design. They will understand the transformative nature of design that exists in a dynamic context. Students will study areas, such as cultural change, globalization, sustainability and technological advances, that will likely impact the design professions over the next decade.

*Prerequisites: DEPD 1130 and ENGL 1100 (or permission of the instructor)*

*Attributes: F2A3*

*Not Transferable*

**DEPD 1240 (formerly DEPD 1120) 3 Credits****Computer Fundamentals**

Students will examine basic computer hardware and software concepts, and the Internet, in relation to product design. They will use word processing and spreadsheet software to develop solutions for design and business problems. Students will explore the 2D and 3D capabilities of using various tools and techniques. They will design and build compositions to create print materials.

Note: This course is similar to FMRK 1105. Students will not be able to earn credits for more than one of FMRK 1105 or DEPD (1120 or 1240).

*Attributes: F2A3*

*Transferable (refer to transfer guide)*

**DEPD 1250 (formerly DEPD 1121) 3 Credits****Construction Technologies**

Students will learn fundamental techniques and methods of construction technology related to soft materials for applications in product design. They will produce reference samples focusing on technical and production aspects of design projects. Students will become proficient in: industrial sewing techniques, patternmaking methods and applications, and textile selection for a variety of pliable materials, both natural and synthetic.

*Attributes: F2A3*

*Transferable (refer to transfer guide)*

**DEPD 2310 6 Credits****Studio 2: Design Content**

Students will explore concepts, materials, and fastening components appropriate to product design. They will apply critical thinking and creative problem-solving processes to explore and experiment with multiple combinations of materials, assembling and affixing technologies. Students will document their findings for future reference, and present the results of their explorations.

*Prerequisites: 30 credits at the 1100-level or higher*

*Co-requisites: DEPD 2320 DEPD 2320*

*Attributes: F2A3*

*Transferable (refer to transfer guide)*

**DEPD 2320 3 Credits****Material Technology**

Students will investigate the technical aspects of soft materials in relation to product design. They will explore the profiles of natural and synthetic materials, including: classification, specification, structure, measurement, and performance. They will seek new uses and applications for soft materials, and consider environmental and technological factors appropriate to product design.

*Prerequisites: 30 credits at the 1100-level or higher*

*Co-requisites: DEPD 2310 DEPD 2310*

*Attributes: F2A3*

*Not Transferable*

**DEPD 2330 (formerly DEPD 1230) 3 Credits****Transformative Thinking for Product Design**

Students will be introduced to the complexities of societal threats and opportunities that affect design. They will understand the transformative nature of design that exists in a dynamic context. Students will study areas, such as cultural change, globalization, sustainability and technological advances, that will likely impact the design professions over the next decade.

*Prerequisites: DEPD 1130*

*Attributes: F2A3*

*Transferable (refer to transfer guide)*

**DEPD 2331 (formerly DEPD 2431) 3 Credits****Human Factors for Product Design**

Students will develop an understanding of ergonomics and human factors within the context of designing highly effective recreational and technical apparel and related soft products. They will research the relationship between product design and user needs for comfort, safety, well-being, and performance. They will explore methods for developing detailed user profiles and system requirements, and for evaluating design alternatives relative to functional and task variables; human needs, capabilities and limitations.

*Prerequisites: MRKT 1199*

*Attributes: F2A3*

*Transferable (refer to transfer guide)*

**DEPD 2410** **6 Credits****Studio 3: Design Context**

Students will further explore concepts, materials, and components, in response to specific criteria for diverse contexts in product design. They will apply critical thinking and creative problem-solving processes in exploring solutions that allow for products to be used differently and more effectively. Students will incorporate relevant socio-cultural, human factor research, and technologies into their design exercises, and present their process and results.

*Prerequisites: DEPD 2310 and 2320*

*Co-requisites: DEPD 2420 DEPD 2420*

*Attributes: F2A3*

*Not Transferable*

**DEPD 2420** **3 Credits****Production Technology**

Students will study various levels of production technology in product design. They will investigate and compare the principles and processes of current production and manufacturing requirements, and consider the limitations and comparative costs involved in forming materials to the required specifications (e.g. shape, size, and finish). Students will explore new resourceful and sustainable applications of production for product design.

*Prerequisites: DEPD 2310 and 2320*

*Co-requisites: DEPD 2410 DEPD 2410*

*Attributes: F2A3*

*Not Transferable*

**DEPD 2430** **3 Credits****Socio-Cultural Issues in Design**

Students will consider essential concepts, theories and methods related to cultural issues and how these might impact the design of soft products. They will engage in critical thinking and creative problem-solving activities related to local, regional, and global issues, such as: social structures, economics, politics, gender, ethnicity, class and age; environment, sustainability and ethical practices.

*Prerequisites: DEPD 1130 and (1140 or 1210) and 1220 and (1230 or 2330) and FIND 1150*

*Attributes: F2A3*

*Not Transferable*

**DEPD 2431** **3 Credits****Human Factors for Product Design**

Students will develop an understanding of ergonomics and human factors within the context of designing highly effective recreational and technical apparel and related soft products. They will research the relationship between product design and user needs for comfort, safety, well-being, and performance. They will explore methods for developing detailed user profiles and system requirements, and for evaluating design alternatives relative to functional and task variables; human needs, capabilities and limitations.

*Prerequisites: ENGL 1100 and MRKT 1199*

*Attributes: F2A3*

*Transferable (refer to transfer guide)*

**DEPD 3510** **6 Credits****Studio 4: Design Engagement**

Students will respond to design briefs and engage in rigorously researching the design of soft goods products for leisure and sports gear. They will critically analyze existing and potential consumer markets, including under-represented demographic groups, with the aim of creatively improving such aspects as function, performance and comfort of products. Students will incorporate interdisciplinary knowledge and technologies into project work.

*Prerequisites: DEPD 2410 and 2420 and (2331 or 2431)*

*Co-requisites: DEPD 3520 DEPD 3520*

*Attributes: F2A3*

**DEPD 3520** **3 Credits****Production Cycle: Manufacture and Strategies**

Students will study sourcing as a major aspect of production technology in soft product design. They will create specifications that include: sizing/grading, product measurements, bills of materials to gather components, vendor information, critical paths, and efficient, lean manufacturing techniques.

*Prerequisites: DEPD 2410 and 2420 and 2430 and (2331 or 2431) and MRKT 1199*

*Co-requisites: DEPD 3510 DEPD 3510*

*Attributes: F2A3*

*Not Transferable*

**DEPD 3530** **3 Credits****Semiotics for Product Design**

Students will reflect on the relationship between semiotics (the study of sign systems) and product design. They will analyze major theories and current discourse to explore how signs and symbols, codes and conventions are used to convey meaning in the marketplace. Students will investigate the types of messages soft goods products communicate in different contexts.

*Prerequisites: MRKT 1199*

*Attributes: F2A3*

*Not Transferable*

**DEPD 3610** **6 Credits****Studio 5: Design Implementation**

Students will further their skills in responding critically and creatively to designing protective gear for dangerous, and unpredictable contexts, e.g. search and rescue, law enforcement, health and safety, and military activities. They will confer with users and critically analyze their needs, with the aim of innovatively and economically improving such aspects as, function, performance and comfort. Students will consider the manufacturing requirements in the development of their solutions.

*Prerequisites: DEPD 3510 and 3520*

*Co-requisites: DEPD 3620 and 3630 DEPD 3620 and 3630*

*Attributes: F2A3*

*Not Transferable*

**DEPD 3620 3 Credits****Product Development for Manufacturing**

Students will study production operations management and process sequencing. They will assess existing examples of product design to analyze the steps required in prototype manufacturing, evaluating the compatibility of materials with the design concept and end use. Students will connect with industry in order to develop a critical manufacturing path relevant to soft product manufacturing.

*Prerequisites: DEPD (2331 or 2431) and 3510 and 3520*

*Co-requisites: DEPD 3610 DEPD 3610*

*Attributes: F2A3*

*Not Transferable*

**DEPD 3630 3 Credits****Industry Experience**

Students will initiate and complete a faculty-approved, industry-related experience relevant to product design and manufacture, e.g. a work arrangement, an educational study tour, a set of trade shows, visits to manufacturing plants, or contributor at a major conference. They will observe and record their experiences, relate them to their course work, and provide documented evidence of the practical knowledge gained and its potential application.

*Prerequisites: DEPD 3510 and 3520 and ENGL 1100 and MRKT 1199*

*Co-requisites: DEPD 3610 and 3620 DEPD 3610 and 3620*

*Attributes: F2A3*

*Not Transferable*

**DEPD 4710 6 Credits****Studio 6: Design Evaluation**

Students will synthesize their knowledge and skills, by completing feasibility studies of a major industry-related project that highlights their personal abilities in product design. They will engage in rigorous research, brainstorm and test ideas, and propose strategies for future development. Students will probe and justify the economic viability, environmental impact, and the technologies required for realization. Students will make professional presentations about their feasibility studies to the university and the community.

*Prerequisites: DEPD 3610 and 3620 and 3630*

*Co-requisites: DEPD 4720 DEPD 4720*

*Attributes: F2A3*

*Not Transferable*

**DEPD 4720 3 Credits****Products & Business Scenarios**

Students will analyze the relationship between soft products and business scenarios. They will analyze circumstances from a global perspective in relation to today's economy. They will study international trade agreements and the legality of trade, and integrate socio-political factors into their research. Students will envision a business scenario, including product development, business supply chain, along with market research and cost estimates.

*Prerequisites: DEPD 3610 and 3620 and 3630*

*Co-requisites: DEPD 4710 DEPD 4710*

*Not Transferable*

**DEPD 4810 9 Credits****Studio 7: Design Projections**

Students will produce a final prototype of their major, industry-related project in product design. They will respond to research completed previously, by advancing and implementing their design strategies. Students will integrate interdisciplinary content; technological advances; specify appropriate manufacturing processes; estimate the economic viability; predict the environmental and ethical impacts of their design decisions. They will demonstrate and defend their solution through comprehensive presentations, documents, to the university and the community.

*Prerequisites: DEPD 4710 and 4720*

*Attributes: F2A3*

*Not Transferable*

**DEPD 4831 3 Credits****The Business of Product Design**

Students will practice professional business and leadership skills relevant to engagement in the product design profession. They will prepare themselves with appropriate knowledge, skills and tools, e.g. resumes, business proposals, portfolios and other documents typically required in business and manufacturing environments. Students will discuss business procedures, marketing plans, financial management, fee proposals and contracts, intellectual property issues, government regulations, ethical and professional liability issues.

*Prerequisites: DEPD 4710 and 4720 and MRKT 4177*

*Co-requisites: DEPD 4810 DEPD 4810*

*Attributes: F2A3*

*Not Transferable*