The Hong Kong Polytechnic University

Subject Description Form

Please read the notes at the end of the table carefully before completing the form.

Subject Code	SFT5972
Subject Title	Virtual Fashion Creation
Credit Value	3
Level	5
Pre-requisite/ Co-requisite/ Exclusion	Nil
Objectives	This subject introduces students to the fundamentals of digital fashion design. Using 3D CAD and other interfacing software, students will obtain a deep understanding of new digital working processes and techniques that have transitioned from traditional methods of garment creation. Students will learn how to operate within a virtual workspace, and develop digital skills that can be applied to the ideation, evaluation, and presentation of a fashion product.
Intended Learning Outcomes *(Note 1)*	Upon completion of the subject, students will: a) Demonstrate a critical understanding of 3D CAD software, its functions, and capabilities, as well as an awareness of appropriate interfacing software it can be used with. b) Draft patterns using 2D and 3D patterning tools, virtually assemble garments, and conduct accurate fit evaluations. c) Develop advanced rendering skills, to generate realistic virtual garments. d) Obtain knowledge of how to prepare a 3D garment pattern for production.

	e) Creatively customize avatars, build virtual environments, to produce detailed images and animations, as well as high-resolution catwalk simulation videos.
Subject Synopsis/ Indicative Syllabus *(Note 2)*	**1. Overview of 3D CAD Workspace** • 3D CAD workspace, menus, tools, and capabilities • Setup workspace to personal preferences • Navigation within virtual workspace, using mouse and keys • General workflow, sequences of virtual garment construction **2. Patterning Skills** • 2D window tools • Avatar setting/measurement • 2D patterning (flat), 3D patterning (drape) • 3D pen garment tool • Trace and import textbook patterns • Garment style line tool • Virtual fitting and pattern evaluation with Stress/Fit Maps. **3. Garment Rendering Skills** • 3D window tools • System settings for general fabric effects (Metal, leather, fur, plastic…) • Customise fabrics Normal/Displacement/Opacity Maps (3D texture, iridescent material, lace, heavy knit, sequin…) • Print Placement, making quartet with continuous pattern • Buttons, zippers, and sewing/stitching effects • Pleats/Fold function • Elastic edge/waistband • Ruffles & Tassels • Puffer jacket with fill tool and pressure function • Fully fashioned knitwear **4. Pattern to Production** • Grading and multiple size runs • Seam allowances, angled corners, notches • Add annotations to pattern blocks (style, pattern name…) • Layout plans using nesting feature • Assign garment measurements • Create a schematic garment render • Export render to generate a techpack (excel format)

5. Image/Video Output

- Personalize Avatar (hair, makeup, posture)
- Image render and environment setting
- Customise lighting and add wind effects
- Animation, turntable, and catwalk simulation
- Output settings and large format printing

Teaching/Learning Methodology

(Note 3)

The teaching of this subject will be conducted during studio sessions. The unit contents will be delivered through in-class demonstrations and practical workshops. In-class exercises will provide an opportunity for students to apply their learning to specific tasks, under the guidance of the subject lecturer.

Additional materials and self-learning exercises will be incorporated via LEARN@Polyu, to support the students learning beyond the classroom.

Assessment Methods in Alignment with Intended Learning Outcomes

(Note 4)

Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)					
		a	b	c	d	e	
1. In-class Exercises	40%	✓	✓	✓	✓	✓	
2. Projects	60%	✓	✓	✓	✓	✓	
Total	100 %						

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

Students are expected to obtain an in-depth understanding of the skills and techniques that are required for working with 3D CAD, and other interfacing software. In-class demonstrations and exercises will support the learning of this subject. Therefore, the course will be assessed by in-class assignments that require students to evidence their understanding of the practical exercises and demonstrations during studio sessions. Furthermore, students are required to communicate effectively and think critically by integrating knowledge gained from the subject with their project work. In-class assignments and projects will be appropriate methods to assess students' proficiency in achieving the intended learning outcomes.

"The materials submitted for this assessment must be the student's own work. The submitted work may not be accepted for the purpose of assessment if its authenticity is questionable. Submitting GenAI-generated materials as students' own work or part of their work is an act of academic dishonesty. Students who are found committing academic dishonesty will face disciplinary actions."

Student Study Effort Expected	Class contact:	
	▪ Studio	39Hrs.
	Other student study effort:	
	▪ Self-Study/Preparation	50Hrs.
	▪ Project/Assignments	50Hrs.
	Total student study effort	139Hrs.
Reading List and References	**Books:** Parish, P., (2018), Pattern Cutting: The Architecture of Fashion; 2nd Edition. Bloomsbury Publishing Plc. Amaden-Crawford, C., (2018), The Art of Fashion Draping, Bloomsbury Academic. Fashionary International Ltd., (2017), Fashion Pedia: The Visual Dictionary of Fashion Design. Makryniotis, T., (2015), 3D Fashion Design: Technique, Design & Visualisation, Batsford. Armstrong, H. J., (2014), Pattern Making for Fashion Design; 5th Edition. Pearson Education Limited. **Website:** https://www.clo3d.com/	

Note 1: Intended Learning Outcomes

Intended learning outcomes should state what students should be able to do or attain upon subject completion. Subject outcomes are expected to contribute to the attainment of the overall programme outcomes.

Note 2: Subject Synopsis/Indicative Syllabus
The syllabus should adequately address the intended learning outcomes. At the same time, overcrowding of the syllabus should be avoided.

Note 3: Teaching/Learning Methodology
This section should include a brief description of the teaching and learning methods to be employed to facilitate learning, and a justification of how the methods are aligned with the intended learning outcomes of the subject.

Note 4: Assessment Method
This section should include the assessment method(s) to be used and its relative weighting, and indicate which of the subject intended learning outcomes that each method is intended to assess. It should also provide a brief explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes.