Subject Description Form

Subject Code	**SFT304AF**
Subject Title	**AI in Fashion Design**
Credit Value	**3**
Level	**3**
Pre-requisite/ Co-requisite/ Exclusion	Nil
Objectives	The objective of this class is to prepare students to be forerunners in the digital fashion world that involves an Artificial Intelligence (AI) based assistant creation process and innovative ways to create and exhibit their design works. Students will learn the fundamentals of AI in fashion design and how to use and adopt AI technologies to help their creative process and exhibit their design works. Students will gain experience to finish the design process with the help of various AI technologies.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: (a) be aware of the digital transformation and virtual fashion, and critically think what the future of digital fashion will be in metaverse; (b) demonstrate knowledge of various strategies for commonly and potentially adopted AI technologies in fashion arena; (c) understand how the engagement of AI technologies in fashion design process and create futuristic digital fashion collection by using an AI-based fashion design technology; and (d) plan, organise and deliver effective oral presentations on project work.
Subject Synopsis/ Indicative Syllabus	**(a) Future of Fashion Design** Introduction of AI and its application in the fashion industry: history, current state, pros and cons and prospects. **(b) AI Technologies for Creating Virtual Fashion** Overview of AI technologies for fashion design and showcasing the digital fashion collection in fashion industry. **(c) Introduction of AI Tools for Fashion Designers** Hands-on sessions and workshop with potential AI tools integrated in fashion design process, from conceptualisation to final design. **(d) Creation of Fashion Collection with AI** Integrate learnt AI technologies in fashion design process and create an AI-based fashion collection.

<table>
<tr><td>Teaching/Learning Methodology</td><td>In this subject, students will gain an understanding of the types of AI technology that can be applied in fashion design; how to create designs effectively and efficiently by adopting AI technology. Student will be able to create fashion collection with integrating AI technology for visualisation and present the ideas in assigned project work through the student-centred project.

Lecture discussion and tutorials will underpin students' understanding of the subject contents. Instrumental cases will be adopted to illustrate the usability of the principles in fashion design process. Apart from lecturing, coursework including assignments and project will also be included.</td></tr>
<tr><td>Assessment Methods in Alignment with Intended Learning Outcomes</td><td>
<table>
<tr><td rowspan="2">Specific assessment methods/tasks</td><td rowspan="2">% weighting</td><td colspan="4">Intended subject learning outcomes to be assessed (Please tick as appropriate)</td></tr>
<tr><td>a</td><td>b</td><td>c</td><td>d</td></tr>
<tr><td>1. Assignment</td><td>40%</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr>
<tr><td>2. Design Project</td><td>60%</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr>
<tr><td>Total</td><td>100%</td><td colspan="4"></td></tr>
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Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

The assignment and design project will assess students' learning outcomes including the understanding of subject matters and applications of fashion design elements and design principles with the integration of AI to create a fashion collection. Students' communication and presentation skills in fashion context will also be assessed.

Students are allowed to use Generative AI tools for the development of the project, including earlier stage research, visual study, inspiration seeking, creative thinking, concept development, etc., in which students are required to have proper declaration and clear elaboration on the level of GenAI in their work. Submitting GenAI-generated materials as students' own work or part of their work without declaration and elaboration is an act of academic dishonesty. Students who are found committing academic dishonesty will face disciplinary actions.</td></tr>
<tr><td></td><td>Class contact:</td><td></td></tr>
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<tr><td rowspan="6">Student Study Effort Expected</td><td>• Lecture</td><td>26 Hrs.</td></tr>
<tr><td>• Tutorial</td><td>12 Hrs.</td></tr>
<tr><td>Other student study effort:</td><td></td></tr>
<tr><td>• Self-study/Preparation</td><td>46 Hrs.</td></tr>
<tr><td>• Project/Assignments</td><td>24 Hrs.</td></tr>
<tr><td>Total student study effort</td><td>108 Hrs.</td></tr>
<tr><td>Reading List and References</td><td colspan="2"><u>Books:</u>

Luce, L. (2018). Artificial Intelligence for Fashion: How AI Is Revolutionizing the Fashion Industry (1st ed.). Apress L. P. https://doi.org/10.1007/978-1-4842-3931-5

N. Ruzive, V., & Jeun Ho Tsang, P. (2023). Fashion Tech Applied: Exploring Augmented Reality, Artificial Intelligence, Virtual Reality, NFTs, Body Scanning, 3D Digital Design, and More (1st ed.). Apress L. P. https://doi.org/10.1007/978-1-4842-9694-3

Wong, W. K. (Ed.). (2018). Artificial Intelligence on Fashion and Textiles: Proceedings of the Artificial Intelligence on Fashion and Textiles (AIFT) Conference 2018, Hong Kong, July 3–6, 2018 (Vol. 849). Springer.

Wong, W. K. (Ed.). (2017). Applications of computer vision in fashion and textiles. Woodhead Publishing.

<u>Paper Articles:</u>

Dubey, A., Bhardwaj, N., Abhinav, K., Kuriakose, S. M., Jain, S., & Arora, V. (2020). AI Assisted Apparel Design. arXiv preprint arXiv:2007.04950.

Kato, N., Osone, H., Oomori, K., Ooi, C. W., & Ochiai, Y. (2019, March). Gans-based clothes design: Pattern maker is all you need to design clothing. In Proceedings of the 10th Augmented Human International Conference 2019 (pp. 1-7).

Ravi, A., Patro, A., Garg, V., Rajagopal, A. K., Rajan, A., & Banerjee, R. H. (2019). Teaching DNNs to design fast fashion. arXiv preprint arXiv:1906.12159.

Sbai, O., Elhoseiny, M., Bordes, A., LeCun, Y., & Couprie, C. (2018). Design: Design inspiration from generative networks. In Proceedings of the European Conference on Computer Vision (ECCV) Workshops (pp. 0-0).</td></tr>
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	Yan, H., Zhang, H., Liu, L., Zhou, D., Xu, X., Zhang, Z., & Yan, S. (2022). Toward Intelligent Design: An AI-based Fashion Designer Using Generative Adversarial Networks Aided by Sketch and Rendering Generators. *IEEE Transactions on Multimedia.* Zou, X., & Wong, W. (2021). fAshIon after fashion: A Report of AI in Fashion. *arXiv preprint arXiv:2105.03050.*