

COURSE OUTLINE FOR STUDENTS AT NTU

Academic Year	2018/19	Semester	1
Course Coordinator	Associate Professor Chen Chun Hsien		
Course Code	MA2014		
Course Title	Product Presentation		
Pre-requisites	Nil		
No of AUs	3		
Contact Hours	Lectures: 26 hours Practical: 26 <u>39</u> hours		
Proposal Date	23 May 2018		

Course Aims

This is an introductory course (for design stream) to acquaint you with the knowledge of design communications in product design and development. The course will teach you the basic drawing systems such as perspective, contour and shading, how to communicate ideas visually and the power of observation, an understanding of marker rendering in presentations, materials and techniques used in marker rendering, and model making techniques using various types of materials from the perspective of industrial design. It also aims at providing you with practical experience in product presentation skills via a series of assignments.

Intended Learning Outcomes (ILO)

Upon successful completion of the course, you should be able to:

1. Translate mental concepts into 2D representations
2. Produce perspective drawings with traditional mediums like pencil
3. Produce simple marker renderings and apply markers on a drawing
4. Produce renderings with various other graphic mediums
5. Select the right material based on the property of different model-making materials
6. Produce product models with a variety of materials
7. Produce product appearance models with a variety of tools and machines.

Course Content

	Topic	Hours
1.	Presentation Techniques Introduction to product presentation techniques. Types of design concept sketches. Basic drawing systems: perspective, contour and shading. Tools and Materials. Marker rendering. Introduction to digital sketching. Descriptive drawing. Backgrounds and mounting.	13
2.	Model-Making Methods Introduction to model-making techniques. Types of design concept models. Tools and materials in model-making. Model-making processes with: foam core model boards, blue bead-less Styrofoam, PU (Polyurethane) Tooling Modeling Board, and vacuum forming plastics.	13

Assessment (includes both continuous and summative assessment)

Component	Course LO Tested	Related Programme LO or Graduate Attributes	Weighting	Team/ Individual	Assessment rubrics
1. Continuous Assessment 1-5 – Product Rendering Assignments	1 to 4	<i>EAB SLO b, c, e, h, j, l</i>	50%	Individual	
2. Continuous Assignment 6-10 – Model-Making Assignments	5, 6, 7	<i>EAB SLO a, b, c, e, h, j, l</i>	50%	Individual	
Total			100%		

* EAB SLO stands for the Engineering Accreditation Board Student Learning Outcomes. The list is below:

- a) **Engineering knowledge:** Apply the knowledge of mathematics, natural science, engineering fundamentals, and an engineering specialisation to the solution of complex engineering problems
- b) **Problem Analysis:** Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- c) **Design/development of Solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
- d) **Investigation:** Conduct investigations of complex problems using research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions
- e) **Modern Tool Usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
- f) **The engineer and Society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- g) **Environment and Sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for the sustainable development.
- h) **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

- i) **Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary settings.
- j) **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- k) **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and economic decision-making, and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- l) **Life-long Learning:** Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change

Formative feedback

Formative feedback will be provided to students during:

1. Sketch and model-making workshop sessions conducted weekly.
2. Return of graded assignments with comments.
3. Mid-term and final presentations of the three model making projects.
4. Final presentation of the sketch rendition.

Learning and Teaching approach

Approach	How does this approach support students in achieving the learning outcomes?
Lectures	Provide you with important fundamental knowledge and information in sketch rendition, model-making, and any other related topics.
Sketch Demonstrations	Conduct sketch demonstrations to help you understand the intended skillsets that the lecturer wishes to impart to.
Sketch Workshop	You will be tasked to sketch/render using the techniques that you have just acquired during the weekly lecture. Upon completion of sketch exercise, Critique session will be conducted to help you improve your sketching and model-making techniques.
Model Making Consultations	Provide guidance to you in your model making materials selection, workshop safety, machines and tooling operations, assembly and joining techniques, surface finishing and coating methods, and other model making issues in their industrial design communication.
Models Presentation	You will complete and present your appearance models using the materials and tools at the model making workshop.

Reading and References

Textbook

Nil

References

1. Powell, D., Presentation Techniques, Brown Little, 1990
2. Eissen, K., Sketching: Drawing Techniques for Product Designers, BIS Publishers, 2009.
3. Pipes, A., Drawing for Designers, Laurence King Publishers, 2007.
4. Neat, D., Model-Making: Materials and Methods, Crowood Press, 2008.
5. Sutherland, M., Model Making: A Basic Guide, W.W. Norton & Co., 1999.

Course Policies and Student Responsibilities

As a student of the course, you are required to abide by both the University Code of Conduct and the Student Code of Conduct. The Codes provide information on the responsibilities of all NTU students, as well as examples of misconduct and details about how students can report suspected misconduct.

The university also has the Student Mental Health Policy. The Policy states the University's commitment to providing a supportive environment for the holistic development of students, including the improvement of mental health and wellbeing. These policies and codes concerning students can be found in the following link.

<http://www.ntu.edu.sg/SAO/Pages/Policies-concerning-students.aspx>

Academic Integrity

Good academic work depends on honesty and ethical behaviour. The quality of your work as a student relies on adhering to the principles of academic integrity and to the NTU Honour Code, a set of values shared by the whole university community. Truth, Trust and Justice are at the core of NTU's shared values.

As a student, it is important that you recognize your responsibilities in understanding and applying the principles of academic integrity in all the work you do at NTU. Not knowing what is involved in maintaining academic integrity does not excuse academic dishonesty. You need to actively equip yourself with strategies to avoid all forms of academic dishonesty, including plagiarism, academic fraud, collusion and cheating. If you are uncertain of the definitions of any of these terms, you should go to the [academic integrity website](#) for more information. Consult your instructor(s) if you need any clarification about the requirements of academic integrity in the course.

Course Instructors

Instructor	Office Location	Phone	Email
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Planned Weekly Schedule

Week	Topic	Course LO	Readings/ Activities
1	Introduction to Product Presentation and Model-Making	N/A	Individual

	Techniques.		
2	Types of Sketch Rendition Techniques: Shading, Line work	1	Individual
3	Understanding Perspective Drawing: 1-2 Point Perspective	1, 2	Individual
4	The Importance of Contours and Contour Lines	1, 2	Individual
5	Introduction to Marker Rendering	1, 2, 3	Individual
6	Final Assignment	1, 2, 3, 4	Individual
7	Introduction to Digital Sketching	1, 2, 3, 4	Individual
8	Types of Design Concept Models. Tools and Materials in Model- Making.	5, 6	Individual
9	Foam Core Model-Making Processes and Practice.	6, 7	Individual
10	Blue Foam Model-Making Processes and Practice.	6, 7	Individual
11	Pu Polyurethane Tooling Modeling Board Model-Making Processes and Practice.	6, 7	Individual
12	Pu Polyurethane Tooling Modeling Board Model-Making Processes and Practice.	6, 7	Individual
13	Finalization of Model-Making Presentation. Final Model Presentation.	5, 6, 7	Individual