Module Guide

Design for a Sustainable Society

ENG - 4 - 545

School of Engineering

Level 4

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1.   MODULE DETAILS

Module Title:	Design for a Sustainable Society
Module Level:	Level 4
Module Reference Number:	ENG-4-545
Credit Value:	20 CATS
Student Study Hours:	135
Contact Hours:	78
Private Study Hours:	122
Co-requisite Modules (If applicable	Design Methods
	Visual communications
	Digital Design and Modelling, Inclusive Design and Usability
Course(s):	BSc Product Design
Year and Semester	2019/20 Semester 2
Module Coordinator	Deborah Andrews
MC Contact Details (Tel, Email, Room)	andrewsd@lsbu.ac.uk, T709
Teaching Team & Contact Details (If applicable):	
Subject Area:	Design
Summary of Assessment Method:	100% Coursework

2.   SHORT DESCRIPTION

Knowledge of sustainability is of paramount importance to designers because they make a significant contribution to the majority of designed products. Therefore this module introduces students to the three fundamental principles of sustainability (environmental, social and economic factors) and highlights the importance of their integration in order to create properly sustainable design output. The module also helps students also develop their creativity and problem solving skills to produce aesthetically pleasing and intuitive design proposals at the same time as developing fundamental understanding of technological principles and applications (general mechanical, electrical, electronic concept, trigonometry etc.) Furthermore in addition to learning *about* sustainability, the module educates students *for* sustainability by encouraging them to practice sustainability in other aspects of their lives and become sustainability literate graduates.

3.   AIMS OF THE MODULE

The aims of the module are that students:
o   understand the importance of sustainability and sustainable design at local, national and international contexts and in the short and long term
o   can apply the fundamental principles of sustainability to different scenarios and challenges
o   can balance sustainable design principles with user needs and produce innovative and desirable products, services and systems
o   understand basic technological principles and applications in order to develop sustainable design proposals

4.   LEARNING OUTCOMES

Students will be able to

4.1   Science and Mathematics (US):

•   Understand basic technical principles and applications and employ them to develop sustainable design solutions (US1i) (US1p)

4.2   Engineering / Design Analysis (E):

4.3   Design (D):

• Engage with potential users to identify their needs including sustainability considerations (D2i) (D2p)
• Understand how the design discipline integrates knowledge of people and systems (D1i) (S6p, E3p)

4.4   Economic, legal, social, ethical, and environmental context (S):

• Understand the principles of sustainability and sustainable design methods (S1i, S4i) (S6p)

4.5   Engineering / Design Practice (P):

• Understanding of and ability to use relevant materials, equipment, tools processes and products (P2i) (D5p, D7p, D10p, P6p)

4.6   Additional General Skills (GS):

• Evaluate your own work and that of others in a constructive way and develop verbal and visual skills as a tool for design research and presentations, present ideas and work to peers and professionals (GS1i) (CTPD-D2, D3)

Note: The number and letter codes in brackets with 'i' suffix eg (D1i) refer to the Institution of Engineering Designers Engineering Design Specific Learning Outcomes for EC(UK) Accredited Degree Programmes; those with 'p' suffix eg (D1p) refer to the Institution of Engineering Designers Product Design Specific Learning Outcomes for Accredited Degree Programmes

5.   ASSESSMENT OF THE MODULE

The module will be 100% coursework assessed through a series of assignments. Submissions will be both in digital and hard-copy format and physical models.

Coursework	Weighting	Hand-in dates – week beginning
Design your future Stage 1	portfolio	31 January 2020
Design your future Stage 2	40%	21 February 2020
A world without Plastics?	60%	23 March 2020

Grading Scheme

You will receive a grade as feedback for each assessed element of the module. Each element will be given a grade as follows:

Grade	Mark	Description
A	Over 70%	Excellent work all round
B	60% - 69%	Good work: or a mixture of excellent plus average work.
C	50% - 59%	Average work: or a mixture of good and below average.
D	40% - 49%	Below average overall but still a pass.
E	30% - 39%	A fail mark but may be compensated by other elements.
F	Below 30%	A fail mark that is normally unable to be compensated by other elements.
X	0%	Opted out of element, exempt from element, or handed work in after final deadline.

Attendance
Attendance is compulsory and students will be penalised for lateness and/or failure to present and submit work. Please make sure you check LSBU Student Attendance monitoring at https://my.lsbu.ac.uk/

Work submission
Normally the work will be submitted digitally or/and printed (as required in the brief) in class or at the Faculty Office and via Moodle. Students are responsible to verify if submission are validated through Moodle and data is actually stored in any media you have used to submit the assignments if using date storage devices.
If you hand in your work in a memory stick, lectures are not responsible for loss or damage of any device.

Late submissions
Students are expected to submit the assignments on dates specified within the project brief. A late submission form should be filled in if you are unable to hand your work by the deadline. The Academic Regulations allow you to hand your work in up to two weeks after the deadline however, your mark will be capped to 40% and after two weeks the work will be marked zero. A student who is unable to submit the work within the deadline must inform the Module leader and Course/Programme Director of the non-submission as s/he may then make a claim for extenuating circumstances. (Please check **Academic Regulations for Taught Programmes 2017/2018**).

6. FEEDBACK

Students will receive verbal feedback during the group critique and written feedback. This will normally be given to you within 15 working days after the submission of an assignment.
Note – it is every student's responsibility to listen to and take notes during verbal feedback sessions and to read written feedback. In all cases it is individual student's responsibility to respond positively to and act on feedback.

7. INTRODUCTION TO STUDYING THE MODULE

7.1   Overview of the Main Content
The module is comprised of lectures, tutorials, demonstrations and visits to public exhibitions. Students are expected to work in the studio and independently, to participate in active research, engage with different users and communities, in discussion as well as written and visual presentation related activities.

7.2   Overview of Types of Classes
The module is comprised of lectures, demonstrations, tutorials, seminars and visits to public exhibitions. Students are expected to work in the studio and independently, to participate in active research, engage with different users and communities, in discussion as well as written and visual presentation related activities.

7.3   Importance of Student Self-Managed Learning Time
Students are required to develop a continuous learning process, in order to produce work of an appropriate level, by developing the contents acquired during class times, study materials are available on Moodle and you expected to consult them.
You are also expected to apply design skills and methodologies learned during lectures, to apply the design process with rigour and professionalism, to attend all sessions and participate fully in seminars and presentations. You are also expected to liaise with and consult teaching staff throughout the project.

7.4   Employability
-    Students will develop a Sustainable Design approach with design thinking methodologies necessary to understand people's needs and adapt to different situations
-    By understanding the inter-relationships between people, planet and you will be able to work for and with a wide range of disciplines and professionals
-    You will improve your project and time management skills (individually and within group)
-    Three-dimensional design skills: further develop your model-making skills

- Refine your visual communication skills and your aesthetic awareness: in two -dimensional design work through exploration of composition, balance, layout and attention to detail.
- Verbal communication studies: improve your verbal communication skills by presenting your design work to an audience
- Three-dimensional design skills: further develop your model-making skills
- Refine your visual communication skills and your aesthetic awareness: in two –dimensional design work through exploration of composition, balance, layout, attention to detail etc.
- Verbal communication studies: improve your verbal communication skills by presenting your design work to an audience
- Ability to work in groups and understand group dynamics

8. THE PROGRAMME OF TEACHING, LEARNING AND ASSESSMENT

A range of assignment briefs will be used to emphasise the following content:
o **sustainability :** integrating and balancing environmental, economic and social factors
o **sustainable design principles** : applying the above to develop designs that address the 'triple bottom line'
o **user needs and aesthetics** : use problem and project based learning to develop inventive and desirable design output
o **understanding technology**: learn about and utilise various technologies as part of the sustainable design process

DESIGN YOU RFUTURE STAGE 1	
All Design classes are in B48 except Friday pm	
Tues 28th Jan 10am-1 pm	Introduction to (un)sustainability; project launch
	Form interdisciplinary groups of 4 – Concept Brainstorming / tutorials
4 – 5.30 pm	**The Age of Stupid – film show** Venue TBC
Weds 29th Jan 1-3 pm	**Visual comms** – introduction to branding; design your project brand
Thurs 30th Jan 10-1 pm	Develop concepts / tutorials
2-4 pm	**Visual comms** – communication design – drawing for storyboards
Fri 31st Jan 10-11.30 am	Complete concept storyboards / tutorials
11.30-11.55 am	Rehearse and upload presentations to moodle
12.00 - 1.00pm	ELEVATOR PITCHES – 3 minute group presentations of concept
	to Sustainability expert Thomas Empson, Nat Puri Institute
Friday 31 Jan 2-5pm Vauxhall City Farm	2pm meet at Borough Road, main entrance
	Walk to Vauxhall City Farm – see the project and meet the animals!
	Visit supported by the School of Engineering

DESIGN YOUR FUTURE STAGE 2	
Session	**Activity - All Design classes are in B48**
Tues 18th Feb 10am-1 pm	Stage 2 - Project launch - Form groups – Concept Brainstorming / tutorials PlasticLog project intro and briefing
Thurs 20th Feb 10-1 pm	PlasticLog project intro and launch; design development / tutorials
Fri 21st – Thurs 27th Feb	Collect data for PlasticLog Inventory
Fri 21st Feb 10-1 pm	Complete design work / work on presentation / tutorials
2-3.30 pm	Complete presentation work
3.30 pm	Upload work to moodle and prepare ELEVATOR PITCH #2
4.00-5.00 pm	ELEVATOR PITCHES – peer assessment to Sustainability expert Thomas Empson, Nat Puri Institute
Thurs 27th Feb – Mon 9th March	Use Excel or similar – design and develop table-based PlasticLog Inventory

A WORLD WITHOUT PLASTICS?		
Date	Event	Content
10.3.20 Tues am	Lecture / tutorials	Intro to A WORLD WITHOUT PLASTICS? assignment Live project with the Marketing Store *Independent research* – brands / promotional material etc.
12.3.20 Thurs am	Seminar - Studio / Tutorials	Bring above research. Creativity methods refresher – Design initiation, concept generation. **Review and Assess PlasticLog inventory** for infographic work with Simon Lunn
13.3.20 Fri am	Studio / Tutorials	Design concept and development in studio; progress tutorials
13.3.20 Fri pm	Seminar / Tutorials	Planning for model-making; work on design concepts and development in studio
Mon Work independently – design concept work; prepare for tutorials during next session		
17.3.20 Tues pm	Studio / Tutorials	Seminar - Planning your presentation; finalise design Review Design work / tutorials
18.3.20 Weds am	T806	Vis Comms – Communicating Complex information - infographics
19.3.20 Thurs am	Studio / Workshop	Finalise design; Tutorials – review design work;
20.3.20 Fri am	Studio / Workshop	Model making – workshops; project review tutorials
20.3.20 Fri pm	Studio / Workshop	Presentation preparation. Model making – workshops; project review tutorials
Monday morning - work independently		
DEADLINE MONDAY 23 MARCH 2020 - Present to The Marketing Store Time TBC Submit hard copies of A3 presentation sheets and model in B48. Submit PDF of presentation sheets to Moodle. Work submitted after 12.00 = LATE = marks capped at 40%		
DEADLINE MONDAY 30 MARCH 2020 – Submit PlasticLog to Moodle – A3 Infographic and Excel Inventory by 17.00 - Work submitted after 17.00 = LATE = marks capped at 40%		

9. STUDENT EVALUATION

Student response to this module was very positive and they particularly enjoyed generated ideas regarding urban design and gardening, the '*physical modelling aspec't* and *'understanding scale'* and the '*variety and depth of different topics*' and '*learning about important global*' issues such as food waste.

Feedback taken from MEQ 2016/17 (Module Evaluation Questionnaire).

10. LEARNING RESOURCES

Workshop facilities for sketch modelling will be required for you to successfully complete this module. You must use the LRC and the Perry Library facilities to access research material including CD/DVD's, the Internet contemporary design magazines and the large variety of books and videos available for reference for all the assignments.

You will also need to access computing systems with word-processing and 3D / 2D design software. Access to software and a large-size colour printer or plotter is available in the LRC.

10.1 Core Materials

- Walker, Stuart: Designing sustainability: making radical changes in a material world: Routledge, 2014.
- Grant, N and Chapman, J,(editors): Designers, visionaries, and other stories : an anthology of sustainable design essays. Earthscan, 2007.
- Datschefski, Edwin: The total beauty of sustainable products: Rotovision, 2001 Fuad-Like, Alastair: The eco-design handbook: a complete sourcebook for the home and office: Thames & Hudson, 2002
- Papanek, Victor: Design for the Real World: Human ecology and social change. Thames and Hudson 1985
- Papanek, Victor: The green imperative: ecology and ethics in design and architecture: Thames and Hudson, c1995.
  Birkeland, Janis: Design for Sustainability, a Sourcebook of integrated eco-logical solutions: Earthscan publications Ltd., 2002
- Hill, Julie: The Secret Life of Stuff: A Manual for a New Material World. Vintage 2011