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Refer to guidance notes for completion of each section of the specification.

<b>Module Code:</b>	ARD465
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<b>Module Title:</b>	Digital Fabrication
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<b>Level:</b>	4	<b>Credit Value:</b>	40
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<b>Cost Centre(s):</b>	GADC	<b>JACS3 code:</b>	W240/100050
		<b>HECoS code:</b>	

<b>Faculty</b>	FAST	<b>Module Leader:</b>	Steve Jarvis
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Scheduled learning and teaching hours	36 hrs
Placement tutor support	0hrs
Supervised learning eg practical classes, workshops	36 hrs
Project supervision (level 6 projects and dissertation modules only)	0 hrs
<b>Total contact hours</b>	<b>72 hrs</b>
Placement / work-based learning	
Guided independent study	328 hrs
<b>Module duration (total hours)</b>	<b>400 hrs</b>

<b>Programme(s) in which to be offered (not including exit awards)</b>	Core	Option
BA(Hons) Product Design	<input checked="" type="checkbox"/>	<input type="checkbox"/>

<b>Pre-requisites</b>
N/A

<b>Office use only</b>	
Initial approval: 08/09/2020	Version no:1
With effect from: 01/09/2021	
Date and details of revision:	Version no:

<b>Module Aims</b>	
	<ul style="list-style-type: none"> <li>To develop the student's skills in the software required to turn ideas and concepts into physical objects.</li> <li>To introduce students to the application and appreciation of fabrication methods and techniques.</li> <li>To enable students in the exploration of the use of digital fabrication methods and techniques.</li> <li>To develop the student's skills in layout, planning and professional presentation.</li> </ul>

<b>Module Learning Outcomes - at the end of this module, students will be able to</b>	
1	Show evidence of gained knowledge of identified software for digital fabrication techniques.
2	Identify links between experimentation in software and the design process leading to the production of satisfactory physical prototypes.
3	Reflect and evaluate the use of fabrication and workshop methods and techniques.
4	Provide evidence of a developing personalised research process and information recording system through the compilation of technical files

<b>Employability Skills The Wrexham Glyndŵr Graduate</b>	<b>I = included in module content A = included in module assessment N/A = not applicable</b>
<b>CORE ATTRIBUTES</b>	
Engaged	I
Creative	IA
Enterprising	I
Ethical	I
<b>KEY ATTITUDES</b>	
Commitment	I
Curiosity	IA
Resilient	IA
Confidence	I
Adaptability	IA
<b>PRACTICAL SKILLSETS</b>	
Digital fluency	IA
Organisation	IA
Leadership and team working	N/A
Critical thinking	IA
Emotional intelligence	A
Communication	A

**Derogations**

None

**Assessment:**

Indicative Assessment Tasks:

This module will be assessed by the verbal and visual presentation of all coursework to demonstrate their ability to identify, appreciate and apply digital fabrication methods and techniques with evidence of planning skills through the submission of design renderings, technical documentation, completed physical prototypes and a written evaluation.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)
1	1-4	Coursework	100

**Learning and Teaching Strategies:**

- Lectures will allow students to identify, appreciate and apply CAD software methods and techniques.
- Assignments will enable students to produce a physical product applying digital fabrication techniques.
- Technical demonstrations will enable students to acquire the technical skills needed to complete the assignments.
- Tutorial guidance, group critique and student seminars will underpin the student's skill development and understanding of the fabrication process.

**Syllabus outline:**

This module introduces students to the identification, appreciation and application of software methods and techniques used in the fabrication process as well as the physical skills of using equipment to produce products/prototype products with an emphasis on planning skills through layout studies.

**Indicative Bibliography:****Essential reading:**

Riley, E. and Martinez, S. (2019). *The Art of Digital Fabrication*. Torrance, CA: Constructing Modern Knowledge Press.

Hallgrimsson, B. (2019). *Prototyping and Modelmaking For Product Design*. 2nd ed. London, UK: Laurence King Publishing Ltd.

### **Other indicative reading**

SENESE, M. (2019). *MAKE: Volume 66*. O'REILLY MEDIA.

Canizare, G. (2019). *Digital Fabrications: Designer Stories for a Software-Based Planet..* ORO Editions/Applied Research & Design.

Rodgers, P. and Milton, A. (2011). *Product Design*. London: Laurence King Publishing Ltd.

Cagan, M. (2018). *Inspired: How to Create Tech Products Customers Love*. 2nd ed. John Wiley & Sons.

### **Websites and Publications:**

<https://www.creativebloq.com/computer-arts-magazine>

<https://www.designcouncil.org.uk/>

<https://www.londondesignfestival.com/>

<https://www.creativereview.co.uk/>

<https://www.barbourproductsearch.info/>

<https://www.fabhub.io/>

<https://uxdesign.cc/>

[Autodesk: Fusion 360](#)

<https://www.solidworks.com/>

<https://www.vectric.com/>