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

<b>Module Code:</b>	ARD466
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<b>Module Title:</b>	Prototypes and Production 1
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<b>Level:</b>	4	<b>Credit Value:</b>	20
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<b>Cost Centre(s):</b>	GADC	<b>JACS3 code:</b>	W700/100895
		<b>HECoS code:</b>	

<b>Faculty</b>	FAST	<b>Module Leader:</b>	Steve Jarvis
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Scheduled learning and teaching hours	18 hrs
Placement tutor support	0hrs
Supervised learning eg practical classes, workshops	18 hrs
Project supervision (level 6 projects and dissertation modules only)	0 hrs
<b>Total contact hours</b>	<b>36 hrs</b>
Placement / work-based learning	
Guided independent study	164 hrs
<b>Module duration (total hours)</b>	<b>200 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:

### Module Aims

The aim of this module is to introduce students to prototyping and significant manufacturing techniques that they will need in order to prototype and realise their designs. Students should become familiar with the problem solving, design thinking, and the decision-making processes needed to plan appropriate prototypes to suitably communicate design intentions using conceptual drawings and reflections.

### Module Learning Outcomes - at the end of this module, students will be able to

1	Identify and detail suitable planning, designing, and modelling strategies, based on conceptual designs produced in earlier modules.
2	Produce working prototype models using methods appropriate to take the final product into production. .
3	Demonstrate and evidence the safe working practice within a workshop environment documenting the production of prototype designs.
4	Professionally produce and present drawings to communicate design intentions, in particular projections, elevations, and sections in general arrangement drawings. .

<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	IA
Ethical	IA
<b>KEY ATTITUDES</b>	
Commitment	IA
Curiosity	IA
Resilient	IA
Confidence	I
Adaptability	IA
<b>PRACTICAL SKILLSETS</b>	
Digital fluency	IA
Organisation	IA
Leadership and team working	IA
Critical thinking	IA
Emotional intelligence	A
Communication	I

## Derogations

None

## Assessment:

### Indicative Assessment Tasks:

Students will produce coursework that demonstrates their ability to identify, appreciate and apply prototyping and production methods and techniques with evidence of planning skills through technical renderings, presentation boards, technical documentation of process and finished prototypes.

In assessing the learning outcomes, a variety of factors will be taken into account, these include:-

- Technical documentation and safe workshop practices
- Communication of design solutions.
- Appropriate use of media and techniques.
- Presentation of finished work.

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 sample product by applying prototyping 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 when creating prototypes for their products as well as the physical skills of using equipment to produce prototype products with an emphasis on planning, presentation skills and research into the production phase of taking a product to market.

Students will take design concepts and apply a variety of media and techniques within digital prototyping and production to explore the boundaries of what is current practice within Product Design, taking their ideas through to appropriate three-dimensional design solutions.

## Indicative Bibliography:

### Essential reading:

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

Higgins, J. (2006), *101 Creative Problem-Solving Techniques*. Winter Park, Fla.: New Management Pub. Co.

### Other indicative reading

Armstrong C. (2018), *The Maker's Field Guide*. [S.I.]: Christopher Armstrong.

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

Baird N. (2020), *Innovator's Playbook: How to Create Great Products, Services and Experiences That Your Customers Will Love*. Chichester: Wiley Blackwell.

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. Hoboken, NJ: 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/>