

UNIT HANDBOOK

2018/19

# Assignment Brief (RQF)

## Higher National Diploma in (first year)

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| Student Name/ID Number: |  |
| Unit Number and Title: | Unit 7 Computer Aided Design (CAD) |
| Academic Year: | 2018-2019 |
| Unit Assessor: | Alexia Grantham |
| Assignment Title: |  |
| Issue Date: | WC 24/09/18 |
| Submission Date: | Part 1 14/01/2019  Part 2 20/05/2019 |
| Internal Verifier Name: | Anne Brennan |
| Date: | 24/09/18 |

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| Submission Format: |
| Portfolio of investigations including:   1. A written report approx. 1500 words 2. Introduction and research relating to chosen issue. 3. Finished Visualisations presented digitally 4. Artefacts: samples; prototypes 5. Finished body adornment (optional) 6. Ongoing evaluative commentary (equivalent to 1,000 words) and final written evaluation (approx 1,000 words) |
| Unit Learning Outcomes: |
| LO1 Discuss the role of CAD in different contexts and its influence on design and manufacturing processes in areas of specialist practice. LO2 Use 2D and 3D CAD software to produce visualisations and drawings in support of an art and design project.  LO3 Present drawings and visualisations, for a given project, produced using CAD software.  LO4 Evaluate the way in which CAD/CAM software may integrate into traditional forms of production. |
| Assignment Brief and Guidance: |
| Scenario You have been commissioned to research and promote awareness of an environmental or social issue of importance to you. You will use CAD to design a piece of body adornment that reflects your creative intention. Your final piece of work (if realised) may be sold to raise funds for the charity of your choice. *All work created needs to reflect design intentions, material experimentation and an illustrated step-by-step record of all techniques and processes.*  Tasks You will produce a portfolio of investigations including: Semester 1 Part 1  Task1  A written report that covers the following:   1. The application of CAD within a contemporary design crafts context. 2. Key software that may be appropriate for use in a contemporary design crafts project. 3. An overview of the benefits of CAD. 4. An evaluation of the challenges of using CAD. 5. Analysis of the impact that CAD has had on the contemporary design crafts industry. 6. Conclusion and recommendations for the use of CAD for the project.   *You are encouraged to include drawings, images, graphics, charts and other material within your written report. Any material that is derived from other sources must be suitably referenced using a standard form of citation. Include a bibliography using an academic standard referencing system and be submitted and uploaded to Turnitin (via college Moodle)*  Task 2   1. A written introduction about the issue/charity of choice you have chosen 2. Idea generation (scamps) of design intentions 3. CAD: 2D Drawings experimental visualisations   Semester 2 Part 2 Task 3   1. CAD: 3D Experimental models and visualisations 2. Presentation of your design intentions to a panel.   Task 4   1. Completed finished 2D drawings (Traditional & CAD techniques) 2. Completed finished 3D renders of body adornment (Traditional & CAD techniques) 3. Artefacts: samples; prototypes   Task 5   1. Written evaluation of ongoing experimental of own design and development processes 2. Written evaluation of the full project   NB. All secondary research should be (clearly referenced in Harvard referencing format). |

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| Learning Outcomes and Assessment Criteria: | | | |
| Learning Outcome | Pass | Merit | Distinction |
| LO1 Discuss the role of CAD in different contexts and its influence on design and manufacturing processes in areas of specialist practice. | P1 Analyse the use of Computer Aided Design (CAD) in different art and design contexts.  P2 Compare traditional and CAD-enabled processes in art and design. | M1 Evaluate how the use of CAD may be beneficial, or problematic, in different art and design contexts. | D1 Assess recent developments in CAD/CAM techniques and practices and their use in industry. |
| LO2 Use 2D and 3D CAD software to produce visualisations and drawings in support of an art and design project. | P3 Produce 2D drawings, exploring the technical and physical parameters of an art and design project.  P4 Develop 3D models and visualisations to experiment with form, material and texture. | M2 Use 2D and 3D CAD drawings and visualisations as part of an iterative art and design development process. | D2 Produce finished 2D and 3D CAD outputs; which are accurately scaled, providing key technical information and communicate form, material and texture. |
| LO3 Present drawings and visualisations, for a given project, produced using CAD software. | P5 Prepare a set of CAD drawings for a given project.  P6 Evaluate the ability of CAD to enhance a project workflow. | M3 Use industry standard conventions in the production and presentation of 2D and 3D CAD output. | LO3 LO4 D3 Present finished 2D and 3D CAD outputs; integrating the use of related software and traditional production techniques to develop outputs that communicate the technical and aesthetic properties of an art and design project. |
| LO4 Evaluate the way in which CAD/CAM software may integrate into traditional forms of production. | P7 Evaluate the integration of CAD/CAM into own design and development process.  P8 Discuss how CAD may impact upon the design process. | M4 Compare traditional and CAD enabled production in relation to efficiency and accuracy. |  |

UNIT SPECIFICATION

Computer Aided Design (CAD) is the use of computer technology in the creative industries, enabling the exploration of design ideas, the visualising of concepts through photorealistic and other visual styles of rendering, and to simulate how a design will look and perform in the real world prior to production. The ability to analyse, modify and optimise a Computer-Generated Image (CGI), object and/or 3D environment is an integral part of the design process in all areas of the creative industries.

This unit aims to provide students with opportunities to develop their understanding and knowledge of CAD software applications used in the creative industries, and the practical skills to utilise the technology within their own creative work.

On successful completion of this unit students will be able to understand the current and prospective uses of CAD technology within creative industries, and be able to produce CAD drawing, objects, 3D environments and visualisations.

Learning Outcomes

1. By the end of this unit students will be able to:
2. Discuss the role of CAD in different contexts and its influence on design and manufacturing processes in areas of specialist practice.
3. Use 2D and 3D CAD software to produce visualisations and technical drawings.
4. Present drawings and renderings, for a given project, produced using CAD software.
5. Evaluate the way in which CAD software may integrate into production processes.

# Week-By-Week Delivery Scheme of work

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| Week No | Session Date | Activity | Topic |
| 1 | 17/09/18 | Introduction | Professional identity Web build  Social Media Platforms  Evaluation and upload to blog |
| 2 | 24/09/18 | Lecture / Report | Application of CAD and Key Software  Evaluation and upload to blog |
| 3 | 01/10/18 | Lecture / Report | Benefits and challenges of cad  Evaluation and upload to blog |
| 4 | 08/10/18 | Lecture / Report | Analysis of the impact of CAD on design crafts  Evaluation and upload to blog |
| 5 | 15/10/18 | Lecture / Report | Learner led Introduction to the charity of choice including Recommended uses of CAD to the project.  Evaluation and upload to blog |
|  | 22/10/18 | Reading Week |  |
| 6 | 29/10/18 | Practical | Introduction to idea generation  Design intention / Design cycle  Traditional drawing  Evaluation and upload to blog |
| 7 | 05/11/18 | Practical 2D | Experimental Visualisations  Illustrator tutorial  Interface Basics, Vector lines and shapes  Evaluation and upload to blog |
| 8 | 12/11/18 | Practical 2D | Experimental Visualisations  Illustrator tutorial  Shape manipulation, pattern  Evaluation and upload to blog |
| 9 | 19/11/18 | Practical 2D | Experimental Visualisations  Illustrator tutorial  Illustrated jewellery CAD and Render  Evaluation and upload to blog |
| 10 | 26/11/18 | Practical 2D | Experimental Visualisations  Illustrator tutorial  Illustrated jewellery CAD and Render  Laser Cuts Laser, Heat forming  Portfolio and board mount  Evaluation and upload to blog |
| 11 | 03/12/18 | Practical 2D | Experimental Visualisations  Illustrated jewellery laser etch and render  Laser Cuts Laser, Heat forming  Evaluation and upload to blog Portfolio and board mount |
| 12 | 10/12/18 | Practical 2D | Experimental Visualisations  Photoshop Tutorial  Interface basics, Basic Image manipulation  Threshold for vector etch  Evaluation and upload to blog |
| 13 | 17/12/18 | UCEN staff development days | Experimental Visualisations  Photoshop Tutorial  Selections, and colour manipulation  Evaluation and upload to blog |
|  | 24/12/18 04/01/19 | Christmas Holidays | Experimental Visualisations  Photoshop Tutorial  Surrealism Distortions  Evaluation and upload to blog |
| 14 | 07/01/19 | Practical 2D | Experimental Visualisations  Photoshop Tutorial  Mapping textures to objects  Evaluation and upload to blog |
| 15 | 14/01/19 | Hand in all work S1 |  |
| 16 | 21/01/19 |  | Experimental Visualisations  Photoshop Tutorial  Mapping images to objects  Evaluation and upload to blog |
| 17 | 28/01/19 |  | Photoshop Tutorial  Product placement on model  Evaluation and upload to blog |
| 18 | 04/02/19 | Practical 3D | Practical 3D  Apps programs and environment  Evaluation and upload to blog |
| 19 | 11/02/19 | Thursday Friday SDD Practical 3D | Practical 3D  Modelling  Evaluation and upload to blog |
|  | 18/02/19 | Reading Week |  |
| 20 | 25/02/19 | Practical 3D | Practical 3D  Modelling  Evaluation and upload to blog |
| 21 | 04/03/19 | Practical 3D | Practical 3D  Modelling  Evaluation and upload to blog |
| 22 | 11/03/19 | Practical 3D | Practical 3D  Modelling and Render and Photoshop image to objects  Evaluation and upload to blog |
| 23 | 18/03/19 | Workshop 1 | Workshop: 1 1:1 Tutorial  Experimental Visualisations  Idea Generation (scamps)  Evaluation and upload to blog |
| 24 | 25/03/19 | Workshop 2 | Workshop: 2 1:1 Tutorial Render / Make  Traditional Drawing  Evaluation and upload to blog |
| 25 | 01/04/19 | Workshop 3 | Workshop: 3 1:1 Tutorial Render / Make  Evaluation and upload to blog |
|  | 08/04/19 22/04/19 | Easter |  |
| 26 | 23/04/19 | Workshop 4 | Workshop: 4 1:1 Tutorial Render / Make  Evaluation and upload to blog |
| 27 | 29/04/19 | Workshop 5 | Workshop: 5 1:1 Tutorial Render / Make / Render /Print  Evaluation and upload to blog |
| 28 | 07/05/19 BH | Presentation | Product placement show  Photographs / Display  Client presentation / Peers  Evaluation and upload to blog |
| 29 | 13/05/19 |  | Full Project Evaluation |
| 30 | 20/05/19 | Hand in all work S2 |  |

\*Please access HN Global for additional resources support and reading for this unit. For further guidance and support on report writing please refer to the Study Skills Unit on HN Global. [www.highernationals.com](http://www.highernationals.com)

* BIRN, J. (2013) Digital lighting and rendering (voices that matter). New Riders.
* BRYDEN, D. (2014) CAD and rapid Prototyping for product design (portfolio skills).
* Laurence King.
* BURKE, S. (2006) Fashion computing: design techniques and CAD (fashion design
* series). Burke Publishing.
* FIORELLO, J.A. (2010) CAD for interiors: Beyond the basics. John Wiley.
* LIPSON, H. and KURMAN, M. (2013) Fabricated: The new world of 3D printing.
* John Wiley.
* VAUGHAN, W. (2011) Digital modelling. New Riders.