

Lani Widdeson

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Education

UNIVERSITY OF BATH – MENG (HONS) MECHANICAL ENGINEERING WITH YEAR LONG WORK PLACEMENT

- Current weighted average: 65.3% - on track for 2:1

RELEVANT MODULES:

- Design Materials & Manufacturing 1 (2020): **70%**
- Design materials & manufacturing 2 (2021): **72%**
- Machine Design (design 4) (2022): **72%**
- Group design project I (business case study and commercial viability report) (2024): **71%**
- Group design project II (Design exhibition and technical report) (2024): **71%**

HARTISMERE SCHOOL (2013-2018) AND SIXTH FORM (2018-2020)

- A Levels: Maths **A***, Further Maths **A**, Physics **A**, EPQ **A*** (about the future of electric air travel)

Work Experience

- **Nissan Technical Centre Europe (NTCE)** (Industrial Placement) (2022-2023)
- Tutoring, Suffolk (between 2018 to 2024)
- Cocoa mama, Eye, Suffolk (2017-2020)
- Volunteer Freshers Captain (2021)

Engineering Experience

NISSAN TECHNICAL CENTRE EUROPE (NTCE) (2022-2023)

- For my yearlong industry placement, I worked at NTCE in the **research and development** department as part of the **exterior design team**. I was responsible for the Horn on all Nissan European car models. As part of this responsibility, I was trusted to communicate with the supplier and design engineers to ensure the implementation of the horn was possible and viable.
- Another significant part of my role was focused on **headlamp simulation**. I ran the simulation software for showcasing current measured headlamp performances in a virtual space and created new digital files of improved headlamp profiles to use as goals for future vehicles.
- I consider this year to have been incredibly beneficial for my **professional development** and **business knowledge**. I learnt how the structure of a global business works and how teams and departments interact to bring a product from conception to launch. I also became more confident in meetings with project directors and suppliers and worked well both within the team and on individual tasks. I now have a broad knowledge of the automotive business and in-depth knowledge of how the automotive engineering industry works at part and assembly levels.

GROUP BUSINESS DESIGN PROJECT (2024) – BATH ROCKET TEAM

- In 2024, I completed a 30-credit group design module. This involved a **business case study** of an existing business, a **commercial viability report** of our team's proposed business, and a **technical report** of my personal design project.
- For this project I worked as part of a team of 20 students (**Bath Rocket Team**) designing a large model rocket to competition standard and specification.
- My assigned section of the rocket was the **Payload Bay**. As a team we decided our payload would be a drone to be rapidly deployed to an altitude of 3000 m as per our business case. This required me to design a payload bay with three main functions: restraining the payload during launch, opening the bay doors, and ejecting the payload. I designed this system independently but with respect to the requirements of the rest of the rocket (such as weight limitations) by communicating with the rest of the team. We also collaborate to produce a commercial feasibility study of our business case for rapid drone deployment by rocket.
- For this project I used my **CAD skills** to build a moving model of the whole payload bay and create all the bespoke parts for the project to a sufficient degree of accuracy that they could be manufactured in the future.
- I documented the design process throughout this project including steps such as concept and design phase, sourcing, validation, sustainability, and cost estimation.

3D PRINTING, WOODWORKING, AND DIY PROJECTS

- 3D printing is a hobby of mine with which I have explored modelling both functional and artistic projects. Some of these include a weeklong analogue clock, an externally attached door lock, a Greek style bust, and 3D characters.
- I have designed and made several woodwork projects in the past couple of years. These include: an elastic band powered model plane and a hidden lock jewelry box, as well as various projects using resin. I particularly enjoy modeling and making things because it allows me to develop my creativity.

Computing Skills

- I have used the following programs as a part of my course so far for coursework and lab reports: **MATLAB**, **AutoCAD 2021**, and **Autodesk Inventor**.
- 3D modelling and printing software for personal projects: **Forger**, **Blender**, **Meshmixer**, and **UltiMaker Cura**.
- Other applications: **Microsoft Word**, **Excel**, **Power Point**, **Microsoft Teams**, **Zoom**, **Chat GPT**, **Davinci Resolve**.

Activities and Interests

I have done **Taekwondo** consistently since the age of 3 and I earned my black belt when I was 13. Since then, I have been helping to teach younger students within my club. Due to this experience, I joined UoB Taekwondo club as a competitor and committee member for the past three years. We have competed and won at several competitions since 2021 where I have also been working as the **team's events coordinator**. This entails booking transport and accommodation for 15-20 students and ensuring the weekend can run smoothly for our team. I have also trained and competed in Judo over the last 16 years and achieved my brown belt. I enjoy playing the saxophone and doing arts and crafts.

Additional Qualifications/Awards

- Python and Apps certificate (Code First Girls)
- Bronze and Silver Duke of Edinburgh Awards
- Full UK Driving License