



Role Title: Electrical/Embedded Engineering Co-op

Reports To: Senior Electrical Engineer

Position Location: Windsor WI

Company Background:

Genus (Parent company to ABS Global, PIC and R&D/IntelliGen) is a global FTSE 250 company, headquartered in the UK and listed on the London Stock Exchange. With revenues of around £500 million, Genus has a presence in over 70 countries, with a global workforce of approximately 3,200 employees. One of the best performing stocks on the London Stock Exchange, the Company's market capitalization is around £2 billion. **We are a worldwide leader in porcine and bovine animal genetics, partnering with farmers to transform how we nourish the world – a mission that is important to a sustainable future.**

Each generation of animals is selected based on a number of desired traits, including greater health, fertility, productivity or feed efficiency. With superior animal genetics, Genus helps its customers in the dairy, beef and porcine supply chains around the world produce offspring with improved robustness, superior production efficiency and greater sustainability. Genus's vision of *"pioneering animal genetic improvement to help nourish the world"* is supported by its core values to be customer-centric, results-driven, pioneering, people-focused and responsible.

For more information on our student program, please visit- www.startingatgenus.com

Overall Responsibilities:

As an electrical engineering co-op at Genus Biosystems Engineering, you will help design the future of our electrical technology. Using the principals of signal processing, embedded computing, and precision power electronics, you will drive the future of animal breeding and genetics. Under the guidance of electrical engineering mentors, you may rapid-prototype circuit boards, program FPGAs and microcontrollers, make detailed lab measurements, and execute test plans as part of a cross disciplinary research and development team. Experiences will vary with the candidate's skills to allow ownership and leadership opportunities.

Qualifications and Experience:

Required Qualifications – All candidates must meet the following.

- Currently pursuing a degree in electrical, computer, biomedical engineering, or related fields.
- Ability to communicate technical problems to a variety of audiences
- Strong self-initiative, leadership drive, curious nature, and desire to learn
- Ability and desire to work with the Genus core values
- Respect for diversity of people and thoughts
- Ability to read/comprehend schematics, datasheets, and Bills of Material (BOM)
- Microsoft Office programs including Word, Excel, Outlook, and Visio

- Windows experience
- Introduction to signal processing, introduction to digital design, and circuit analysis classes completed
- 3.0 or higher GPA

Desired Qualifications – A strong qualified candidate may not need proficiency in all listed areas. However, a strong candidate may exhibit a strong desire to learn and apply skills in areas of interest, pertinent to business goals, while exploring opportunities for growth.

- Prior co-op, internship, or research experience
- Masters or Doctorate candidate
- Analog and digital circuit board design experience
- Analog and digital circuit analysis experience with various tools include BODE plots, nodal analysis, truth tables, and others
- Verilog or VHDL design for synthesis and testbench
- Ability to understand and implement timing diagrams for implementation closure and timing analysis
- PlanAhead, Vivado, Quartus Experience
- Development experience with VS Code, Docker, pipelines, command line, and GUI interfaces
- Linux experience
- Strong Scripting experience with Python, MATLAB, and/or TCL
- Experience with Gitlab or other GIT revision control
- Circuit simulation experience using LTSpice, TINA, or similar
- Circuit design and schematic capture in Altium, Cadence, or similar
- Circuit layout experience in Altium, Cadence, or similar
- Familiarity with principals of mechanical, microfluidic, and optical design
- Familiarity and observance of software-based strategies like CI/CD, scrum, and revision control
- Lab experience with multi-meters, oscilloscopes, waveform generators, soldering irons, and microscopes

Capabilities and behaviors:

- Live and display the Genus values at all times in their day-to-day activities.
- Maintain professional verbal and written communications with co-workers, internal and external customers, and vendors at all times.
- Be flexible with respect to job responsibilities and consistently strive to be an effective team member.
- Strive to advance your skills and display a willingness to accept future development.
- Actively participate in company training opportunities to further develop skills applicable to the team.
- Gain an understanding of the company's business and the team's role within the company.