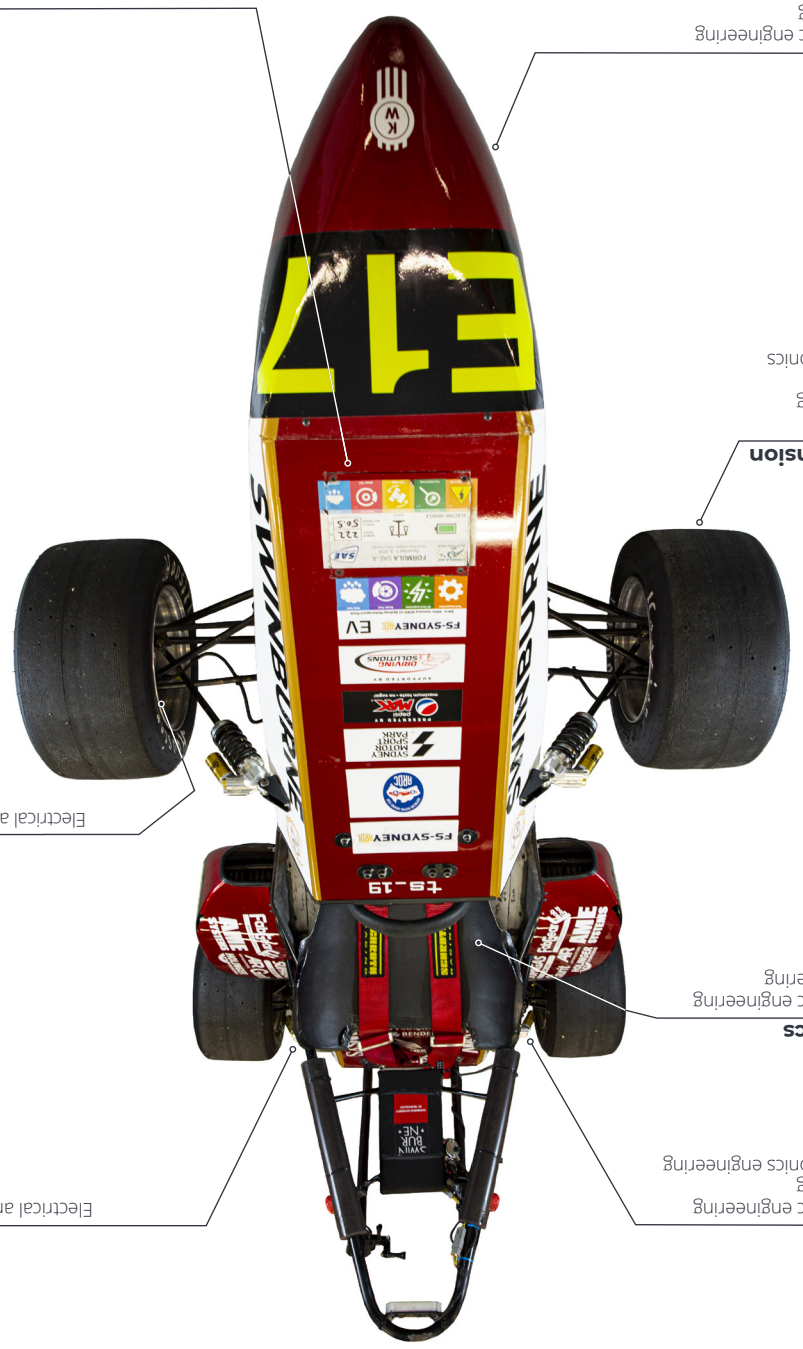



## Skills required to engineer a race car

A race car is a complex system of interconnected parts working together. Like the car, the team behind it needs to work together to combine skills and knowledge from a range of engineering fields.

**COMMUNICATION BETWEEN DRIVER AND TEAM**
Telecommunications engineering

**RACE STRATEGY, CAR AND RACE MODELLING, SAFETY PLAN**
Electrical and electronic engineering
Mechanical engineering
Robotics and mechatronics engineering
Software engineering
Telecommunications engineering

**ELECTRIC BATTERY SYSTEM**
Electrical and electronic engineering
Mechanical engineering
Software engineering

**ENERGY RECOVERY SYSTEM**
Electrical and electronic engineering
Robotics and mechatronics engineering
Software engineering

**DATA AQUISITION**
Electrical and electronic engineering
Software engineering

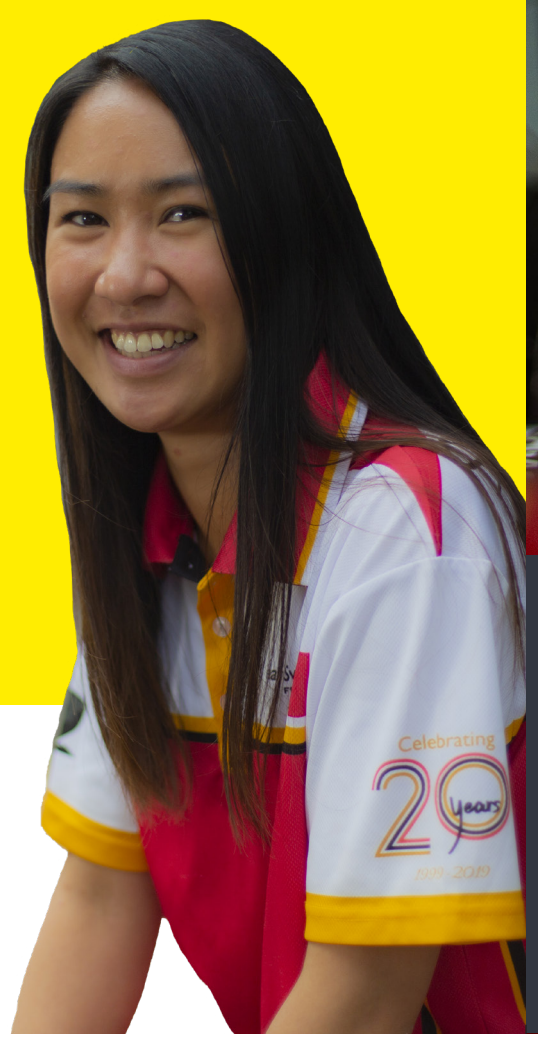
**COMMUNICATION BETWEEN DRIVER AND TEAM**
Telecommunications engineering

## Skills for your career

Getting you job-ready is at the core of what we do. That's why Swinburne students have many opportunities to gain experience working in interdisciplinary teams throughout their studies.

At Swinburne, you'll build invaluable skills, career networks and most importantly, the confidence of knowing you have what it takes to land a job in your field.

Team Swinburne Formula SAE offers students from a range of study areas, including engineering, business, finance and computer science, the chance to design, build, market and race a Formula-style race car. It's a unique experience to apply classroom learnings and acquire practical, professional and technical skills working in a collaborative environment to prepare you for your career.

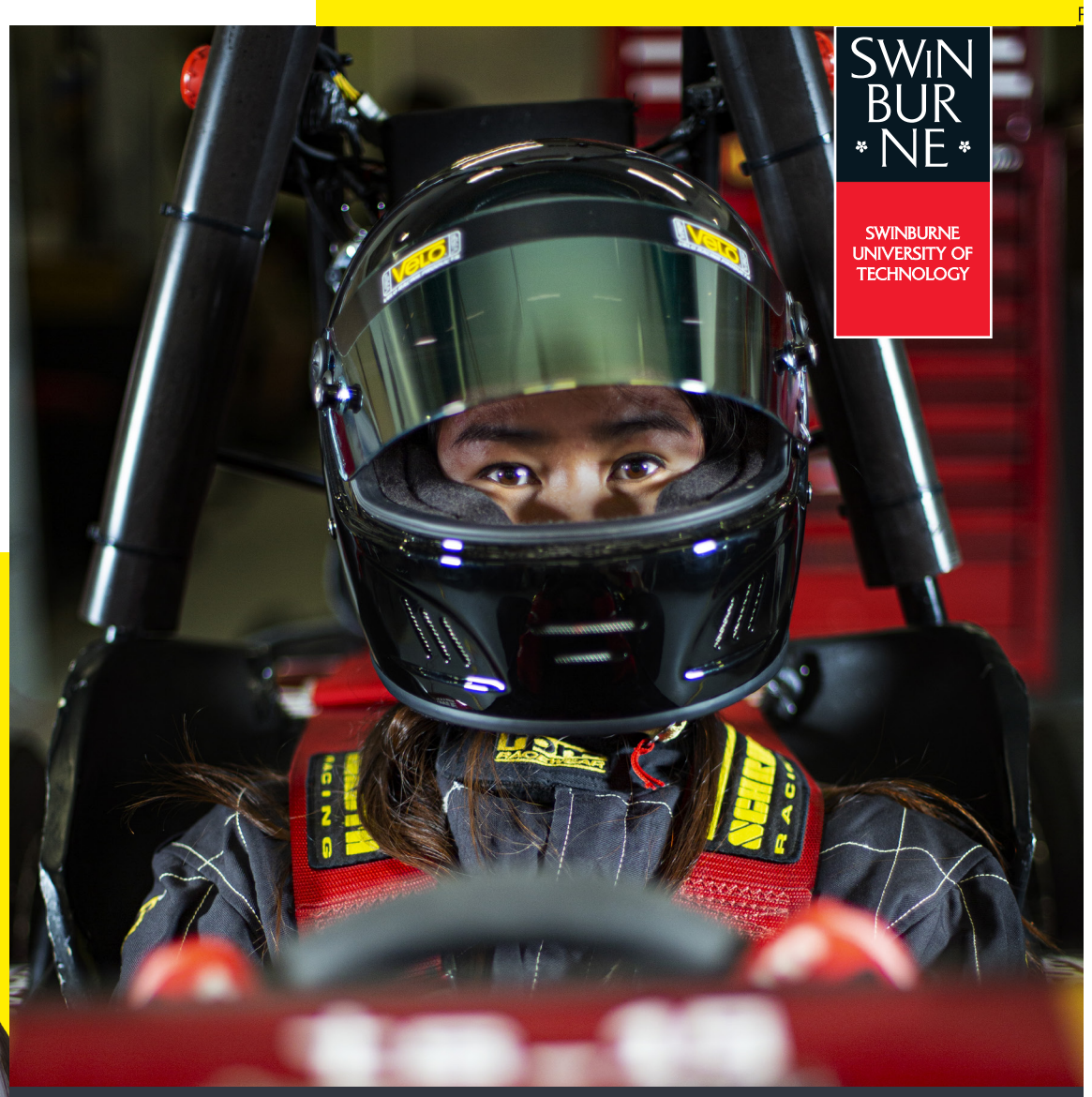



**"I joined Team Swinburne because I love motorsports and I want to learn more about the industry. I also enjoy interacting with other team members. I have applied business analysis and project management, problem solving, critical thinking and collaborating in a multi-disciplinary team to a real organisation because Team Swinburne operates as a real business.**

**I encourage you to join Team Swinburne. It's a great opportunity to transfer your knowledge and prepare you for the workforce.**

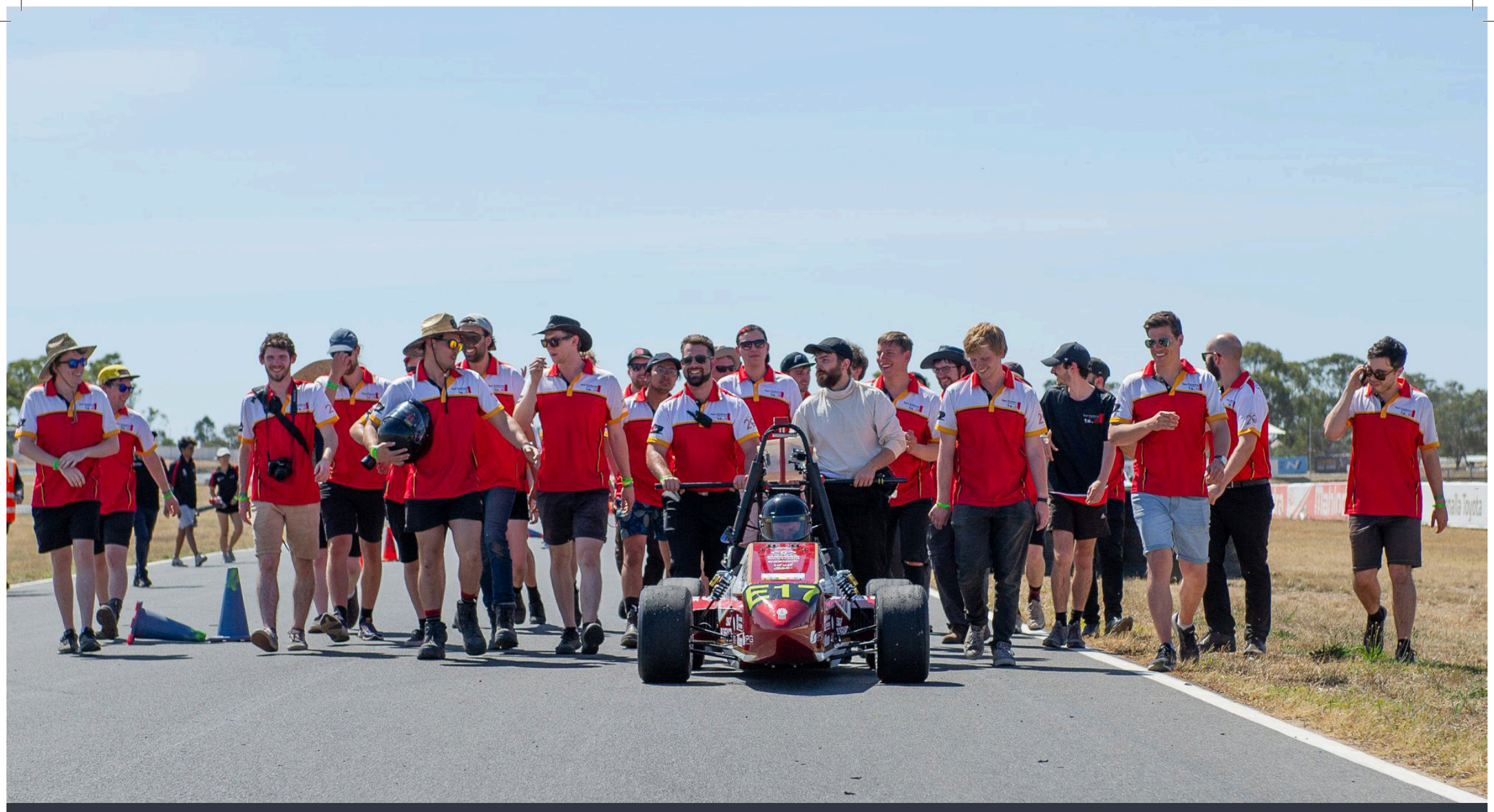
**JENNIFER**
**SPONSORSHIP AND ENGAGEMENTS MANAGER, TEAM SWINBURNE**

Master of Information Technology
– Information Systems Specialisation




# ENGINEERING
## A CAREER IN THE MOTOR RACING INDUSTRY

**swinburne.edu.au/engineering**




# SWINBURNE STUDY GUIDE

## FOR THE MOTOR RACING INDUSTRY

## WORK ON THE RACE CAR

**Design and build all-wheel-drive hub motors**
Study electrical and electronic engineering
Study mechanical engineering

**Design and build advanced composite chassis**
Study mechanical engineering
Study product design engineering

**Design and build high and low voltage systems**
Study electrical and electronic engineering

**Automate car components to reduce human error**
Study robotics and mechatronics engineering
Study software engineering

**Improve car's performance using data**
Study applied mathematics
Study data analytics

**Improve cockpit design to enhance driver's performance**
Study industrial design
Study product design engineering

**Improve fuel efficiency and sustainability**
Study biotechnology
Study chemistry

**Design battery accumulator**
Study electrical engineering
Study mechanical engineering
Study robotics and mechatronics engineering

## BUILD THE BUSINESS

**Create games based on racing industry**
Study games and interactivity
Study games development

**Design merchandise and event program**
Study communication design
Study graphic design

**Design space for merchandise sales**
Study branded environments
Study visual merchandising

**Design and build website**
Study communication design
Study software development

**Oversee contract for TV broadcast rights**
Study law

**Coordinate links between international divisions of business**
Study international business

**Promote brand, news and events**
Study marketing
Study social media

**Ensure security of data from racing teams and/or fans**
Study cybersecurity
Study network design

**Broadcast the race to global audience**
Study film and television
Study journalism

**Develop partnerships and networks**
Study entrepreneurship and innovation

## ASSIST THE DRIVER

**Explore how racing impacts the body**
Study biomedical science

**Monitor driver's mental health**
Study psychology
Study psychology and psychophysiology

**Explore the impact of driver fatigue on performance**
Study aviation human factors

**Improve driver's health**
Study health across their lifespan
Study nursing

**Improve driver's performance using data**
Study applied mathematics
Study data analytics

**Connect driver and pit crew through communications networks**
Study telecommunications engineering

**Create simulators to improve driver training**
Study animation
Study games development

## RUN THE RACE

**Design and build race track**
Study civil engineering
Study construction engineering

**Plan, set-up and pack-down event**
Study events
Study logistics and supply chain management

**Improve car's aerodynamic performance on the track**
Study physics

**Ensure cars and spare parts get where they're needed**
Study logistics and supply chain management

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