**FSUK MathWorks Modeling and Simulation Award 2026**

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| **Event Name:** | FSUK MathWorks Modeling and Simulation Award 2026 |
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| **Date of Announcement** | **March, 2026** |

## A. Award Overview

The FSUK MathWorks Modeling and Simulation Award 2026 is designed to recognize and reward teams that excel in utilizing MathWorks tools for the design of their electric, combustion, and autonomous vehicles in the Formula Student UK 2026 competition. The goal is to have each participating team share how they use MathWorks tools and work to adopt industry-grade model-based design. The award determination process consists of two stages: evaluation of a detailed report and assessment of a formal presentation. The teams will be scored on the following criteria: vehicle dynamics; powertrain; control design and tuning; driverless/autonomous systems; embedded code generation.

The top three teams that demonstrate the most effective use of MathWorks software will be honored at the Formula Student UK 2026 award ceremony with cash prizes:

**1st = £1,000**
**2nd = £650**
**3rd = £350**

## B. Procedure

- Participation in this competition is free.
- The teams will need to submit a document in a PDF format to the by June 18th**.** Only one entry may be submitted by each team. The detail of submission is provided in Section D. The report must be submitted in a **two-column format** and is limited to a **maximum of five pages**.
- All entries will be judged by MathWorks engineers on a 100-point scale. The scoring criteria is provided in Section **C.**
- The 1st, 2nd, and 3rd winners will be announced at the Formula Student UK 2026 award ceremony.
- **Judges' decisions are final.**

## C. Content

Points (out of **100**) will be assigned according to the submitted PDF document, evaluated against the following criteria:

1. Relating overall competition objectives, how has the team applied The MathWorks' tools to the task of:

    **a. (25 pts) Vehicle Dynamics**
        i. How were the vehicle dynamics models developed using MATLAB and Simulink?
        ii. How were the models validated and what level of correlation to real world results was obtained?
        iii. Are the models architected in a way that provides for ease of use, understanding, extensibility and fast execution?

    *Example: Suspension system, steering system, tire modeling, longitudinal and lateral vehicle dynamics models, lap time simulation, etc.*

    **b. (25 pts) Powertrain**
        i. How were the powertrain models developed using MATLAB and Simulink?
        ii. How were the models validated and what level of correlation to real world results was obtained?
        iii. Are the models architected in a way that provides for ease of use, understanding, extensibility and fast execution?

    *Example: Transmission, drivetrain, motor design, motor cooling system, battery modeling, etc.*

    **c. (25 pts) Control Design and Tuning**
        i. How were the control models developed using MATLAB and Simulink?
        ii. How were the control models validated and what level of correlation to real world results were obtained?
        iii. Are the models architected in a way that provides ease of use, understanding, extensibility, and fast execution?

    *Example: Traction control, torque vectoring, longitudinal and lateral vehicle control, motor control, drag reduction system, battery management system, thermal management system, etc.*

    **d. (10 pts) Driverless/Autonomous Systems**
        i. How was MATLAB and Simulink used to design driverless systems?

ii. How were the models validated and what level of correlation to real world results was obtained?

2. Are the models architected in a way that provides for ease of use, understanding, extensibility and fast execution?

   *Example: Perception, sensor fusion, planning, control, etc.*

   a. **(10 pts) Embedded Code Generation (https://www.mathworks.com/solutions/embedded-code-generation.html)**
      i. Was Embedded Coder, Simulink Coder, or MATLAB Coder used to generate code from Simulink or MATLAB models?
      ii. Was the generated code successfully deployed and tested on real-time hardware (e.g., ECU, microcontroller, Speedgoat, etc.)?

3. **(5 pts)** Plan for next year/ Lessons learnt– what would you do different next time and what is missing from the tools that would have helped you?

## D. Submission

Teams should submit their PDF using the Formula Student UK Submission portal.

Please ensure you have completed all fields and attach your qualifying PDF to be considered for the award.

## E. Reference Materials

Request complimentary software: https://www.mathworks.com/academia/student-competitions/formula-student-uk.html

Recommended Tutorials:

- Simscape Essentials for Automotive Student Team: mathworks.com/videos/series/simscape-essentials-for-automotive-student-teams.html
- MATLAB and Simulink Racing Lounge – Improving Your Racecar Development: mathworks.com/videos/series/improving-your-racecar-development-101027.html
- Code Generation: https://www.mathworks.com/academia/students/tutorials-videos.html#codegeneration
- Get Started with the Extended Tire Features for Vehicle Dynamics Blockset: mathworks.com/help/vdynblks/ug/get-started-with-the-extended-tire-features-for-vehicle-dynamics-blockset.html

Published Videos/Blogs by Teams:

- How AMZ Racing Designed the Motor Controller to Achieve 0 to 100 km/h in 0.956 Seconds: https://blogs.mathworks.com/student-lounge/2024/06/03/how-amz-racing-designed-the-motor-controller-to-achieve-0-to-100-km-h-in-0-956-seconds/
- Formula Student Vehicle Modeling Using Simscape Multibody: youtu.be/YzCEyr2F3Rw?si=KJYe55RFN4uXUy3f
- Virtual suspension design processes with McGill Formula Electric: blogs.mathworks.com/student-lounge/2021/08/27/virtual-suspension-design-processes-with-mcgill-formula-electric/?doing_wp_cron=1660639858.1010980606079101562500

- Lap Time Simulation; Essential Part of Concept Development: mathworks.com/videos/matlab-and-simulink-racing-lounge-lap-time-simulation-essential-part-of-concept-development-98733.html
- Formula Student Driver-in-the-Loop Simulator Using Simulink and Unreal Engine: https://youtu.be/2ewBax-etuw?si=6P0-Iy8IJRYG20o6