



# **FSH Rules 2011**

V1.00

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## 1. IMPORTANT DATES

### 1.1. Competition Dates and Location

August 18, 2011 to August 21, 2011

Formula Student Hungary (FSH) will take place in 9181 Győr-Károlyháza, Kikötő I.

GPS: coordinates:    +47° 43'57.07"  
                              +17°46'16.83"

### 1.2. Registration

Start: February 11, 2011 at 12:00 CET

Registration forms will be accepted in the order in which they are received, starting February 11, 2011 at 12:00 CET and ending on April 30, 2011 12:00 CEST or when the 30 cars registration limit is reached. Registration will be online at the FSH Website. ([www.fshungary.hu](http://www.fshungary.hu))

**NOTE: You have to designate ALL team members during the registration process. Later you will NOT have the possibility to buy additional tickets for team members, but you will be able to switch designated team members until July 15.**

**Your registration is only valid after you pay the registration fee. You can start uploading your documents after your registration is valid.**

### 1.3. Structural Equivalency Form

Deadline: June 1, 2011 at 12:00 CEST

**IMPORTANT: ALL TEAMS MUST SUBMIT A STRUCTURAL EQUIVALENCY FORM.** A blank copy of this form is supplied in FSH Rules Appendix A-A.

The Structural Equivalency Form must be uploaded to the FSH website no later than June 1, 2011 at **12:00 CEST**. Late submissions will be penalized with -10 (minus ten) points per day, up to a maximum of - 70 points, which will be taken off the team's Total Score.

Teams, which missed the SEF deadline by more than 7 days will be removed from the FSH 2011 competition.

In the event that FSH requests additional information or calculations, teams have 10 days from the date of the request to submit the requested information. Late submissions will be

penalized with -10 (minus ten) points per day, up to a maximum of -50 points, which will be deducted from the team's Total Score.

## 1.4. Impact Attenuator Data

Deadline: June 1, 2011 at 12:00 CEST

**IMPORTANT: ALL TEAMS MUST SUBMIT AN FSH IMPACT ATTENUATOR DATA FORM. A blank copy of this form is supplied in FSH Rules, Appendix A-B.**

Impact Attenuator Data must be uploaded to FSH website no later than June 1, 2011 at **12:00 CEST**.

Late submissions will be penalized with -10 (minus ten) points per day, up to a maximum of -70 points, which will be deducted from the team's Total Score.

Teams, which miss the IAD deadlines by more than 7 days will be removed from the FSH 2011 competition.

In the event that FSH requests additional information or calculations, teams have 10 days from the date of the request to submit the requested information. Late submissions will be penalized with -10 (minus ten) points per day, up to a maximum of -50 points, which will be deducted from the team's Total Score.

## 1.5. Engineering Design Report and Design Spec Sheet

Deadline: June 30, 2011 at 12:00 CEST

The FSH Engineering Design Report and the FSH Engineering Design Spec Sheet must be uploaded to the FSH website no later than June 30, 2011 at **12:00 CEST**.

Late submissions will be penalized with -10 (minus ten) points per day, up to a maximum of -100 points, which will be deducted from the team's Engineering Design Event Score. No report submitted will result in a score of zero for the Engineering Design Event.

## 1.6. Cost Report

Deadline: June 30, 2011 at 12:00 CEST

The Cost Report consists of 2 parts, the Written Report and the Electronic Copy of the Bill of Materials (BOM). The electronic BOM must be submitted as a Microsoft Excel® file. The file must be uploaded to the FSH Website no later than June 30, 2011 at **12:00 CEST**.

The written Report must arrive at the address listed below, no later than the specified date.

Mr. Alexander Dudás  
Formula Student Hungary  
Csaba u. 21.  
9023 Győr  
Hungary

The parcel or envelope used must be clearly labelled with the Senders University Name and FSH assigned Car Number.

Late submissions will be penalized with -10 (minus ten) points per day, up to a maximum of -80 points, which will be deducted from the team's Cost Event Score. No report submitted will result in a score of zero for the Cost Event.

## **1.7. Business Plan Executive Summary**

Deadline: June 30, 2011 at 12:00 CEST

The Business Plan Executive Summary must be uploaded to the FSH website no later than June 30, 2011 at **12:00 CEST**.

Late submission or non submission will be penalized at the discretion of the judges up to -5 (minus five) points. These penalty points will be deducted from the Presentation Judging Score.

## **1.8. Fuel Type Order**

Deadline: July 25, 2011 at 12:00 CEST

You must inform FSH which type of fuel you will use no later than July 25, 2011 at 12:00 CEST.

## **1.9. Team Member Designation**

Deadline: July 25, 2011 at 12:00 CEST

Participating team members must be designated prior to the event. Only the team captains can designate the team members on the FSH home page.



## **1.10. Health Insurance Certificate**

Deadline: July 25, 2011 at 12:00 CEST

Collect and scan all health insurance certificates of the event participants and upload them as a multiple page Adobe Acrobat® file (\*.pdf). This file must be submitted no later than July 25, 2011 at 12:00 CEST.

## 2. GENERAL

### 2.1. Formula Student Hungary 2011 Rules

The Formula Student Hungary (FSH) competition will comply with the Formula SAE® 2011 rules, located here:

<http://students.sae.org/competitions/formulaseries/rules/>

Formula Student Hungary does have some specific rule changes and additions. Those changes and additions are located within this document, which supersede the specific sections of the published Formula SAE® rules for 2011. Any questions or ambiguities concerning the rules for Formula Student Hungary will be resolved by the Formula Student Hungary Rules Committee. You may contact FSH here: [alexander.dudas@fshungary.hu](mailto:alexander.dudas@fshungary.hu)

### 2.2. Official Language

The Formula Student Hungary Official Language is **English**.

### 2.3. Official Time

The Formula Student Hungary Official Time is **CEST**

### 2.4. FSH Registration

#### 2.4.1. FSH Registration Deadline

The registration deadline for Formula Student Hungary is listed in the Important Dates section of this document. (Please refer to FSH Rules, section 1.2)

#### 2.4.2. FSH Registration Capacity Limit

Registrations will be given out, in the order in which they are received. The 2011 Formula Student Hungary competition will be limited to a total of 30 competing teams.

The **overall top 3 teams** from FSH 2010 will have a **registration priority** as far as they send a pre application e-mail to the [pre-app@fshungary.hu](mailto:pre-app@fshungary.hu) address before the 10<sup>th</sup> of February 2011.

Overall Top 3 teams are:

- Running Snail Racing Team
- BME Formula racing Team
- Bodensee Racing Team

### **2.4.3. FSH Registration Fee**

The registration fee of 750 Euros is for one 20-person team. More team members can be registered for 25 Euros per each additional team member. There is no limit to team size.

The teams have to pay the registration fee via bank transfer within 10 days from the team's registration date. Every team will get an invoice via e-mail shortly after the event registration. It is important to fill out all your invoice information in your team account, if one information is missing, we will not be able to send you an invoice.

Important information:

Bank account number: 11763378-41901881  
IBAN: HU83 1176 3378 4190 1881 0000 0000  
BIC (SWIFT) Code: OTP VHUHB

We need to know your European VAT number(if you are from a not European country then your local VAT number)!

You have to pay the transfer fee (approximately 0,05 %), this you have to tell your bank before transferring.

NOTE: Registration fees are NOT refundable.

### **2.4.4. FSH Registration Procedure**

You will find a short explanation for the registration procedure on the FSH home page in the "Registration steps" menu.

## **2.5. Society Membership**

Every participating team member must be a member of one of the FISITA ([www.fisita.org](http://www.fisita.org)) engineering societies.

## **2.6. Faculty Advisor**

FSH strongly recommends that all participating teams have a Faculty Advisor present with them at all times, during the competition. In the case of having no Faculty Advisor present during competition, the Team Captain will take over all responsibilities as the acting Faculty Advisor. The Faculty advisor has to be registered the same way as a Team Member, please write "Faculty Advisor" into the "Title" field of the FA's profile.

## **2.7. FSH First Year Vehicles**

FSH only accepts first year vehicles. A “first year vehicle” must have at least a completely new frame, which shows significant design changes compared to the vehicle used the year before at other events.

## **3. VEHICLE REQUIREMENTS AND RESTRICTIONS**

### **3.1. Alternative Frame Rules (Specific FSH change of Formula SAE® 2011 Rule B 3.0)**

Alternative Frame Rules are still under development. Therefore FSH will not offer the possibility to review any request for Alternative Frame Rules for 2011.

Teams for which the Alternative Frame request already has been granted by any of the other FSAE organizing bodies are allowed to use the frame built to the Alternative Frame Rules for the FSH 2011 competition.

### **3.2. Impact Attenuator**

#### **3.2.1. Anti Intrusion Plate (Specific FSH change of Formula SAE® 2011 Rule B 3.20.6)**

On all cars, a 1.5 mm (0.060 in) solid steel or 4.0 mm (0.157 in) solid aluminium “antiintrusion-plate” must be integrated into the Impact Attenuator. Alternative materials are prohibited.

### **3.3. Engine Lubrication System**

The lowest point of the engine lubrication system must be no lower than the lowest frame rail. If the engine oil sump or any other part of the lubrication system is lower than the lowest frame rail, it must be protected by an FSH approved skid plate, or frame tubes installed longitudinally under affected part of the engine lubrication system. The engine lubrication system must be protected from surface contact in any situation while in operation on track, especially in the event of a suspension failure.

### **3.4. Fuel System**

#### **3.4.1. Refueling**

Re-fueling must be able to be accomplished without the removal of any body parts of the car.

#### **3.4.2. Fuel Tank Visible Access**

All fuel lines and electrical connections, which are connected to the fuel tank or parts in the fuel tank, such as (but not limited to) fuel pumps or sensors, must be clearly visible to the technical inspectors without using instruments such as endoscopes or mirrors. Visible access can be provided by removing body panels or by providing removable access panels.

### **3.4.3. Fuel Lines and Connectors (Specific FSH change of Formula SAE® 2011 Rule B 8.8.1)**

Fuel lines and hoses made from PTFE (Polytetrafluoroethylene) are prohibited. The use of plastic quick release connectors and plastic fittings located between the fuel tank and the engine (supply and return) are not permitted.

### **3.4.4. Fuel Rails (Specific FSH change of Formula SAE® 2011 Rule B 8.9)**

The use of fuel rails made from plastic, carbon fibre or rapid prototyping flammable materials is prohibited.

### **3.4.5. Ventilation of Enclosed Structures (Specific FSH change of Formula SAE® 2011 Rule B 9.7.3)**

Enclosed monocoque structures, undertrays or skid plates designed to protect the engine or tanks carrying liquids; must have at least 2 (two) holes (each a minimum of 50 mm in diameter). These holes must be positioned in the lowest part of the structure in such a way as to positively prevent accumulation of volatile liquids and/or vapours.

### **3.4.6. Fuel**

The provided fuel at FSH 2011 is expected to be ROZ 98 and E-85. This can be changed on significant request.

## **3.5. Electrical System**

### **3.5.1. Brake Over-Travel Switch (Specific FSH change of Formula SAE® 2011 Rule B 7.3.3)**

The Brake Over-Travel switch must be a mechanical single pole, single throw (commonly known as a two-position) switch (push-pull or flip type) .

### **3.6. Driver Egress (Specific FSH change of Formula SAE® 2011 Rule B 4.8)**

The driver egress, required by Formula SAE® 2011 Rule B 4.8 must be possible in all steering wheel positions.

### **3.7. Fire Extinguishers (Specific FSH change of Formula SAE® 2011 Rule B 17.2.1)**

Aqueous Film Forming Foam (AFFF) fire extinguishers are prohibited.

## **3.8. Vehicle Identification**

### **3.8.1. School Name (Specific FSH change of Formula SAE® 2011 Rule B 16.2)**

The following school type abbreviations are accepted. The city name must be written fully.

Technical University - TU + City

University of Applied Sciences – UaS + City

University - Uni + City

If the university uses a shortcut in their proper name, this shortcut is acceptable + city.

### **3.8.2. Technical Inspection Sticker Space (Specific FSH change of Formula SAE® 2011 Rule B 16.4)**

The technical inspection sticker will be placed on the nose of the car directly in front of the cockpit opening. A space 40 mm tall x 160 mm wide must be made available for this sticker.

### **3.8.3. Transponders (Specific FSH change of Formula SAE® 2011 Rule B 15.2)**

Transponders will be provided by FSH. Only FSH provided Transponders will be acceptable for use at FSH.

### **3.8.4. Driver's Undergarments (Specific FSH change of Formula SAE® 2011 Rule B 17.6)**

All drivers have to wear underwear ((long pants and long sleeve t-shirt) certified to SFI 3.3 or FIA 8856-2000

## **4. PIT RULES**

### **4.1.1. Electrical Power during pushing**

The car must be able to be pushed around with the Primary Master Switch in the OFF position.

### **4.1.2. Push Bar (Specific FSH change of Formula SAE® 2011 Rule D 13.2)**

The push bar must be a separate, detachable device. Rear wings will not be accepted as a push bar. The push bar must be located behind the rear axle when the car is moved. One fire extinguisher has to be attached to the push bar by a quick release mechanism in an easily accessible position.

### **4.1.3. Engine running in the pits**

Running of engines is not allowed in the pits or the garage areas. There is a designated, supervised, engine running area for this purpose. All engine running is to be conducted in the designated engine running area only. Engine running is allowed only during the active hours of competition. No engines are to be run under any circumstances between the hours of 20:00 to 8:00.

## **4.2. Quick Jack**

Each team must present a quick jack to lift up the car by using the jacking point during Technical Inspection. The quick jack must be able to lift up the rear end of the car, so that the drive wheels are at least 10.2 cm (4 in) off the ground.

## **5. SEF AND IAD DOCUMENTS**

### **5.1. Structural Equivalency and Structural Equivalency Form**

All teams must submit the FSH Structural Equivalency Form, supplied in FSH Rules Appendix A-A. The use of alternative materials or tubing sizes to those specified in Formula SAE® 2011 Rule B 3.3.1 “Baseline Steel Material” is allowed, provided they have been judged by a technical review to have equal or superior properties to those specified in Formula SAE® 2011 Rule B 3.3.1 “Baseline Steel Material”. Structural equivalency must be demonstrated by providing calculations and/or tests results. All calculations must compare the alternative material with S235Jr (Material number 1.0037). Tensile strength and yield stress properties (at a minimum) of the alternative material must be compared with the same attributes of S235Jr. All formula symbols and abbreviations, used in the SEF, must be defined.

### **5.2. Impact Attenuator Data**

All teams must submit the FSH Impact Attenuator Data Form, supplied in FSH Rules Appendix A-B, along their test results, description of the test setup, the used test equipment and photo documentation of the IAD before and after the test. The Impact Attenuator Data must be submitted no later than the specified date.

## **6. TECHNICAL INSPECTION**

### **6.1. Inspection & Testing Requirement**

Tech Inspectors will mark or seal various different approved parts (i.e. air restrictor, tires, rims etc.). The car can be disqualified from any dynamic event by using, or substituting unmarked parts. Parts with broken seals are equivalent to being unmarked.

### **6.2. Car Weighing**

All cars will be weighed prior to Engineering Design Judging. All cars are to be weighed in ready to race condition. The fuel tank must be filled to the fuel level line. All lubricants and coolants must be in the car. This weight will be the car's Official Technical Inspection weight.

## 7. DYNAMIC EVENTS

### 7.1. Dynamic Events and Maximum score (Specific FSH change of Formula SAE® 2011 Rules Part D Article 1)

Skid Pad	75
Acceleration	75
Autocross	100
Fuel Efficiency	100
Endurance	325
<b>Total</b>	<b>675</b>

### 7.2. Skid Pad Scoring (Specific FSH change of Formula SAE® 2011 Rule D 6.8.3)

The following equation is used to determine the scores for the skid-pad event:

$$\text{Skid Pad Score} = 71,5 \times \frac{\left(\frac{6.184}{T_{\text{your}}}\right)^2 - 1}{\left(\frac{6.184}{T_{\text{min}}}\right)^2 - 1} + 3,5$$

Where:

$T_{\text{your}}$  is the average of the left and the right timed laps on your best run including penalties.

$T_{\text{min}}$  is the elapsed time of the fastest car

### 7.3. Autocross Scoring (Specific FSH change of Formula SAE® 2011 Rule D 7.8.1)

The following equation is used to determine the scores for the autocross event:

$$\text{Autocross Score} = 95,5 \times \frac{\left(\frac{T_{\text{max}}}{T_{\text{your}}}\right) - 1}{\left(\frac{T_{\text{max}}}{T_{\text{min}}}\right) - 1} + 4,5$$

Where:

$T_{\text{min}}$  is the lowest corrected elapsed time recorded for any competitor in either heat

$T_{\text{max}}$  is 125% of  $T_{\text{min}}$

$T_{\text{your}}$  is the lowest corrected elapsed time in either heat for the team being scored.

## 7.4. Endurance Scoring (Specific FSH change of Formula SAE® 2011 Rules D 7.8.1)

The following equation is used to determine the scores for the endurance event:

$$Endurance\ Score = 275 \times \frac{(T_{max} / T_{your}) - 1}{(T_{max} / T_{min}) - 1} + 50$$

Where:

**T<sub>min</sub>** will be the lowest corrected time of the fastest team of the event.

**T<sub>your</sub>** will be the combined corrected times of both of your team's drivers in the heat.

**T<sub>max</sub>** will be 1.333 times T<sub>min</sub>.

The Minimum Endurance Score is 25 (twenty five) Points, even if the corrected time of the team (T<sub>your</sub>) is higher than 133% of the fastest corrected time (T<sub>min</sub>)

## 7.5. Fuel Efficiency Scoring (Specific FSH change of Formula SAE® 2011 Rules D 8.22 and D 8.23)

$$FuelEfficiencyScore = 100 \times \frac{(FuelEfficiencyFactor_{min} / FuelEfficiencyFactor_{your}) - 1}{(FuelEfficiencyFactor_{min} / FuelEfficiencyFactor_{max}) - 1}$$

$$FuelEfficiencyFactor = \left( \frac{T_{min}/lap_{total}}{T_{your}/lap_{yours}} \right) \times \left( \frac{V_{min}/lap_{total}}{V_{your}/lap_{yours}} \right)$$

Where:

**V<sub>min</sub>** is the smallest volume of fuel used by any competitor

**V<sub>your</sub>** is the volume of fuel used by the team being scored. Vehicles whose fuel volume exceeds 26 liter/100km, will receive zero (0) points for fuel efficiency.

**T<sub>min</sub>** will be the lowest corrected time of the fastest team of the event.

**T<sub>your</sub>** will be the combined corrected times of the drivers in your heat. Vehicles whose corrected time exceeds 1.333 times the corrected time of the fastest team, will receive zero (0) points for fuel efficiency.

**Lap<sub>yours</sub>** will be the number of driven laps, at least 50% of the total endurance distance.

**Lap<sub>total</sub>** will be the number of laps for the full endurance distance.

## **8. STATIC EVENTS**

**The maximum possible scores in the static events are:**

Cost and Manufacturing 100 Points

Presentation 75 Points

Design 150 Points

**Total 325 Points**

### **8.1. Business Plan Presentation (75 Points)**

#### **8.1.1. Executive Summary**

Judging will start with an Executive Summary before the FSH Competition. The principal document submitted prior to the Business Plan Presentation is an Executive Summary. The Executive Summary must not exceed one (1) page, team name and car number must be written on the Executive Summary. The Executive Summary should contain a brief description of the team's Business Plan. In the Summary the two most outstanding technical features of the car should be listed. The Summary has to include the anticipated production cost, per vehicle, in a production run of 1000 cars per year (value from Cost Report). The Executive Summary must relate to the specific prototype car entered in the FSH competition. The costs of the prototype car entered will not be considered as part of the Business Plan judging.

The Executive Summary must be submitted in Adobe Acrobat® format (\*.pdf file) online, no later than the specified date. Late submission and non submission will be penalized. It is at the discretion of the judges to deduct between -5 (minus five) points from the Presentation Judging score. The penalty points will be deducted from your final Business Plan Presentation Score.

#### **8.1.2. Data Projection Equipment**

Video projectors / video monitors will be provided by Formula Student Hungary. These projectors will have VGA input connectors. The organizers will not provide any other presentation equipment needed. Teams planning to use other presentation equipment, as a part of their presentation, are responsible for bringing, or otherwise arranging their own equipment.

### **8.2. Engineering Design Event (150 Points)**

#### **8.2.1. Judging Sequence**

At Formula Student Hungary Engineering Design Judging will be held in the teams pits, the judging schedule will be posted on the FSH home page.

### **8.2.2. Engineering Design Report Files. File Format and Size**

The Engineering Design Report must be submitted in Adobe Acrobat® format (\*.pdf file) online, no later than the specified date. (Please see FSH Rule, section 1.5)

### **8.2.3. Engineering Design Spec Sheet. File Format and Units**

The FSH Engineering Design Spec Sheet must be submitted in Microsoft Excel® format (\*.xls file) online, no later than the specified date. (Please see FSH Rule, section 1.5) The Formula Student Hungary Engineering Design Spec Sheet template can be found on the FSH website.

**DO NOT alter or re-format the template prior to submission. Simply fill in the blanks.**

### **8.2.4. Penalty for late submission**

Penalties for late/non submission of the Engineering Design Reports and/or Engineering Design Spec Sheets is as follows:

Late arrival of one or both documents: -10 (minus ten) points for each day, up to a maximum penalty of -100 points. Failure to submit one or both documents will automatically result in zero points for the Engineering Design Event.

The penalty points will be deducted from your final Engineering Design Scores. The minimum allowable Engineering Design Score will be 0 Points.

## **8.3. Cost Event (100 Points)**

### **8.3.1. Cost Event Scoring (Specific FSh change of Formula SAE® 2011 Rule C 3.7)**

Total: 100 Points

The points for the Cost and Manufacturing Event will be broken down as follows

#### Part 1, Lowest Cost : 20 Points

Each of the participating schools will be ranked by total retail cost from the BOM multiplied with a quotient of  $P_{your}$  (visual inspection) and 40 (maximum points for visual inspection) and given 0-20 points based on the formula on the left.

$P_{your}$  is the cost of your car and  
 $P_{min}$  is the cost of the cheapest car.

$P_{max}$  is the cost of the most expensive car.  $P_{your}$  (visual inspection) are your points for the visual inspection. 40 points are the maximum score for visual inspection

Points will be calculated as follows:

$$20 \times \frac{(P_{\max} / P_{\text{your}}) - 1}{((P_{\max} / P_{\min}) - 1 \times (P_{\text{your(Visual\_Inspection)}} / 40))}$$

### Part 2, Real Case Situation : 40 Points

Real Case Situation – Teams will receive a task covered a “Real Case in Industry”

### Part 3, Event Day Discussion : 40 Points

Event Day/Visual Inspection - The cars will be reviewed for part content and manufacturing feasibility. The submitted process descriptions will be discussed.

#### **8.3.2. Late submission of Cost Report (Specific FSH change of Formula SAE® 2011 Rule C 5.15)**

Teams that submit reports later than the specified date will be penalized -10 (minus ten) points per day, up to a maximum penalty of -80 points. Teams which do not submit a Cost Report will receive 0 (zero) points for the Cost & Manufacturing Analysis score. Minimum Event score is 0 (zero) points.

#### **8.3.3. Addenda (Specific FSH change of Formula SAE® 2011 Rule C 5.15)**

For changes in your corrections made after the submission of the cost report please use the FSAE cost addendum form given in FSAE Rules Appendix E. For all new parts, which are manufactured, a drawing must be attached to the addendum form.

#### **8.3.4. Cost Report Penalties Process (Specific FSH change of Formula SAE® 2011 Rule C 5.17)**

Only penalty method A will be used for FSH, described in Formula SAE® 2011 Rule C 3.18

“Penalty Method A – Fixed Point Deductions”. The Formula SAE® 2011 Rule C 3.19 “Penalty Method B – Adjusted Cost Deductions” is not valid for the FSH competition.



## Formula Student Hungary - Appendix A-A

### STRUCTURAL EQUIVALENCY FORM

This form must be completed and submitted **no later the date specified** in the Deadlines.  
FSH will review all submissions which deviate from the FSAE® and FSH rules for Roll-over or Side Impact Structure.

**This form must also accompany the vehicle to Technical Inspection.**

Structural Equivalency Forms (SEF) and supporting calculations must be submitted electronically in Adobe Acrobat Format (\*.pdf) and must be upload on the FSH-Website. In the event that the FSH requests additional information or calculations, teams have **10 days** from the date of the request to submit the requested information. Late submissions will be penalized with -10 (ten) points per day.

#### Contact Details

Car Number: .....

University Name: .....

**Team Contact Person**

Last Name, First Name: .....

Telephone Number: .....

E-mail Address: .....

**Rule Deviated?** ( ALL teams must answer this question.)

Underline that apply:

**YES**, alternative material was used to that specified in Formula SAE® 2011 Rule B 3.3.1  
**NO**, chassis is compliant to the baseline requirements

Check all that apply:

<b>Baseline Material Used</b>	<b>Alternative Material Used</b>	
<input type="checkbox"/>	<input type="checkbox"/>	B 3.10 Main Roll Hoop Material
<input type="checkbox"/>	<input type="checkbox"/>	B 3.11 Front Roll Hoop Material
<input type="checkbox"/>	<input type="checkbox"/>	B 3.12 Main Roll Hoop Bracing
<input type="checkbox"/>	<input type="checkbox"/>	B 3.12.6 Main Hoop Bracing Support
<input type="checkbox"/>	<input type="checkbox"/>	B 3.13 Front Roll Hoop Bracing Support-Tubular Frames
<input type="checkbox"/>	<input type="checkbox"/>	B 3.18 Front Bulkhead Support-Tubular Frames
<input type="checkbox"/>	<input type="checkbox"/>	B 3.19 Front Bulkhead Support-Tubular Frames
<input type="checkbox"/>	<input type="checkbox"/>	B 3.20.3 Impact Attenuator Attachment-Monocoque
<input type="checkbox"/>	<input type="checkbox"/>	B 3.24 Side Impact Protection – Tubular Frames
<input type="checkbox"/>	<input type="checkbox"/>	B 3.29 Front Bulkhead - Monocoque
<input type="checkbox"/>	<input type="checkbox"/>	B 3.30 Monocoque Front Bulkhead Support
<input type="checkbox"/>	<input type="checkbox"/>	B 3.31 Monocoque Side Impact
<input type="checkbox"/>	<input type="checkbox"/>	B 3.32 Monocoque Main Hoop Attachment
<input type="checkbox"/>	<input type="checkbox"/>	B 3.33 Monocoque Front Hoop
<input type="checkbox"/>	<input type="checkbox"/>	B 3.33 Monocoque Front Hoop Bracing
<input type="checkbox"/>	<input type="checkbox"/>	B 3.34 Monocoque Main Hoop Bracing
<input type="checkbox"/>	<input type="checkbox"/>	B 5.2.4 Monocoque Safety Harness Attachment
<input type="checkbox"/>	<input type="checkbox"/>	B 5.4.1 Shoulder Harness

**Attachment Checklist (make sure all are included in your report)**

- Properties for all non-steel materials
- Holes drilled in any regulated tubing require a deviation, include area and moment of inertia
- Monocoque laminate testing data and pictures
- Receipt, letter of donation or proof for non-steel materials (composite, honeycomb, resin, etc).

**Attach Proof of Equivalency**

Roll bar documentation should include material type(s), material certification(s), properties, heat treatment, and strength calculations showing equivalency. Side impact documentation should include material type(s), material certification(s), properties, heat treatment, cloth weights, resin type, fiber orientation, number of layers, core material, lay-up technique, and strength calculations showing equivalency.

**Attach Pictures**

Please attach pictures of the frame and/or monocoque on the following pages for review during the SEF process. Please label all tubes to show outer diameter and wall thickness. Two view drawings (front and side) and isometric views of the structure (CAD) are acceptable. Note: The final decision about all designs will be made at technical inspection. Approval of an SEF does not guarantee passing Technical Inspection.



## Formula Student Hungary - Appendix A-B

### IMPACT ATTENUATOR FORM

This form must be completed and submitted **no later the date specified** in the Deadlines. The FSH Technical Committee will review all submissions which deviate from the FSAE® and FSH rules for Impact Attenuator.

**This form must also accompany the vehicle to Technical Inspection.**

Impact Attenuator Form (IAF) and supporting calculations must be submitted electronically in Adobe Acrobat Format (\*.pdf) and must be upload on the FSH-Website. In the event that the FSH requests additional information or calculations, teams have **10 days** from the date of the request to submit the requested information. Late submissions will be penalized with -10 (ten) points per day.

#### Contact Details

Car Number: .....

University Name: .....

#### Team Contact Person

Last Name, First Name: .....

Telephone Number: .....

E-mail Address: .....

Please NOTE: Rule B3.21.10!

Please NOTE: In case a dynamic test is performed, a certificate including contact details of and signed by either the institute where the test was performed, or a responsible of the university must be included in the report.

### Attach Proof of Impact Attenuator: