

2016 FORMULA SAE MICHIGAN

Event Guide



**FORMULA SAE
MICHIGAN**

#FSAEMICHIGAN

FORMULA SAE MICHIGAN

2016 SAE PRESIDENT'S MESSAGE



Dear Formula SAE® Participants and Organizers:

Welcome to the Formula SAE competition at Michigan International Speedway in Brooklyn, Michigan.

Formula SAE is steeped in tradition and competition. Now in its 35th year, Formula SAE provides the real-world challenges of systems engineering, design and problem solving, along with the teaming challenges of collaboration and cooperation. In short, Formula SAE, along with all of the SAE Collegiate Design Series™ competitions, provides the skills and experiences needed for a well-rounded engineering education.

Through the years, Formula SAE has evolved to reflect the technological advancements in automotive engineering. Along with the traditional internal combustion engines, competitions incorporate hybrid and electric technologies. In addition to the competitions held here in the United States, SAE International recognizes seven international Formula SAE/Formula student competitions organized by international parties.

The types of learning opportunities are just as diversified. This week, collegiate engineering students from several nations will compete in a series of static and dynamic events designed to challenge their engineering, problem-solving and teamwork skills. The students will work hard and compete to win. Some will earn top honors, others will not. But all will leave here winners because they will be better engineering students.

You, along with the nearly 2,400 competitors from 120 schools are joining the next generation of engineers who will work to develop the technologies needed for higher-performing and more innovative performance vehicles.

The Formula SAE® competition – along with the entire Collegiate Design Series™ – is a crucial part of the fabric of SAE International. With more than 127,000 members in over nations around the world, SAE International continually works to advance engineering education to all levels of students and professionals.

Good luck to everyone competing in this event. The experiences you gain this week will last throughout your lives. Also, I want to thank everyone for their hard work, support and participation; it's because of you that this competition is such a success.

Sincerely,

A handwritten signature in black ink, appearing to read 'C. Oge', written over the printed name and title.

Cuneyt L. Oge
President, SAE International

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CONCEPT OF THE COMPETITION

The Formula SAE® Series are competitions that challenge teams of university undergraduate and graduate students to conceive, design, fabricate and compete with a small, formula style, competition vehicle. To give teams the maximum design flexibility and the freedom to express their creativity and imaginations, there are very few restrictions on the overall vehicle design. Teams typically spend eight to twelve months designing, building, testing and preparing their vehicles before a competition. The competitions themselves give teams the chance to demonstrate and prove both their creation and their engineering skills in comparison to teams from other universities around the world. Registered for this event are 120 teams from colleges and universities. The end result is a great experience for young engineers in a meaningful engineering project as well as the opportunity of working in a dedicated team effort.

For the purpose of this competition, the students are to assume that a manufacturing firm has engaged them to produce a prototype car for evaluation as a production item. The intended sales market is the nonprofessional weekend competitor. Therefore, the car must have very high performance in terms of its acceleration, braking, and handling qualities. The car must be low in cost, easy to maintain, and reliable. In addition, the car's marketability is enhanced by other factors such as aesthetics, comfort and use of common parts. The manufacturing firm is planning to produce four (4) cars per day for a limited production run. The challenge to the design team is to design and fabricate a prototype car that best meets these goals and intents. Each design will be compared and judged with other competing designs to determine the best overall car.

Over the course of four days, the cars are judged in a series of static and dynamic events including: technical inspection, cost, presentation, engineering design, solo performance trials, and high performance track endurance. These events are scored to determine how well the car performs. In each event, the manufacturing firm has specified minimum acceptable performance levels that are reflected in the scoring equations.

STATIC EVENTS:

Design: The students explain their constructive solutions to a jury of experts from the automotive and motorsport industries in report and discussion. The concept of the design is to evaluate the engineering effort that went into the design of the car and how the engineering meets the intent of the market. The car that illustrates the best use of engineering to meet the design goals and the best understanding of the design by the team members will win the design event.

Cost: The students are to assume that a serial production of 1000 cars a year will follow the prototype. The cost calculation is discussed with a jury based on a report. The objective of the event is for the participants to learn and understand the manufacturing techniques and processes of some of the components that they have chosen to purchase rather than fabricate themselves.

Presentation: The objective is to evaluate the team's ability to develop and deliver a comprehensive business case that will convince the executives of a fictional manufacturing firm that the team's design best meets the demands of the amateur weekend competition market and that it can be profitably manufactured and marketed.

DYNAMIC EVENTS:

Acceleration: The cars are evaluated on their accelerating abilities from a standing start over a distance of 75 meters.

Autocross: The objective is to evaluate the car's maneuverability and handling qualities on a tight course without the hindrance of competing cars. The course will combine the performance features of acceleration, braking and cornering into one event. The results of the Autocross scores determine the starting order for endurance.

Skid-Pad: The objective is to measure the car's cornering ability on a flat surface while making a constant-radius turn. The course will be a pair of concentric circles in shape of the number 8; the cars demonstrate how good lateral forces can be absorbed (up to 1.4g).

Endurance: Over a distance of 22 km, the cars have to prove their durability under long-term conditions. Acceleration, speed, handling, dynamics, fuel efficiency, reliability – the cars have to prove it all.

THE FOLLOWING POINTS ARE POSSIBLE:

Static Events (Thursday)	75	Presentation
	150	Design
	100	Cost Analysis
Dynamic Events (Friday & Saturday)	75	Acceleration
	50	Skid-Pad
	150	Autocross
	100	Fuel Efficiency
	300	Endurance
TOTAL POINTS:	1000	



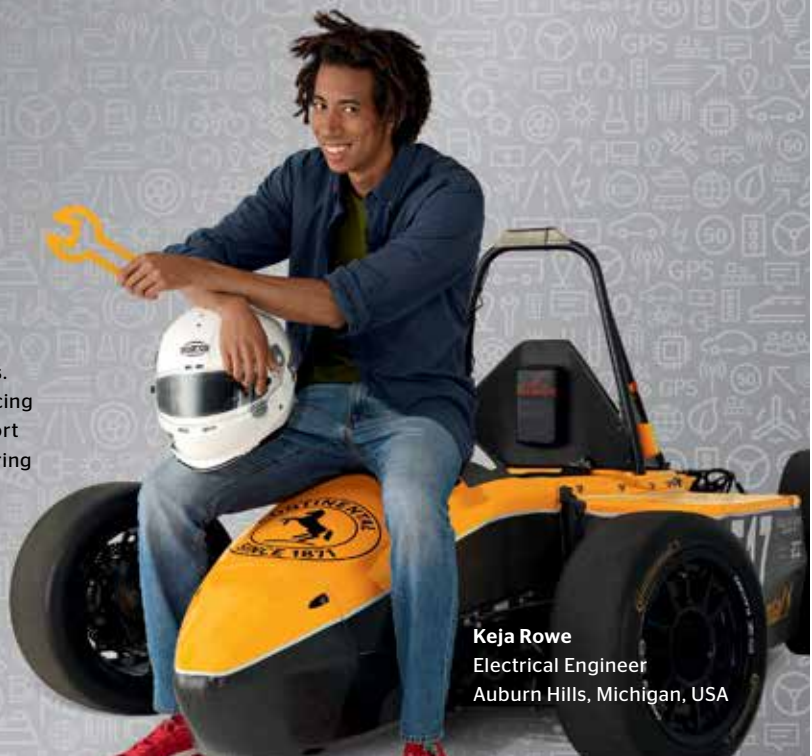
Ready, set, career.

I create development software tools for cars.

My motivation: As a student I developed racing cars. Today I bring in all my passion and effort into the development of tools that help to bring self-driving car features to the market.

Let your ideas shape the future.

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Keja Rowe
Electrical Engineer
Auburn Hills, Michigan, USA

2016 FORMULA SAE® MICHIGAN

SCHEDULE OF EVENTS

DAILY OPERATIONS:

■ MIS Site Open:

- Wed. 9:00 a.m. – 7:30 p.m.
- Th. 7:30 a.m. – 7:30 p.m.
- Fri. 7:30 a.m. – 8:30 p.m.
- Sat. 7:00 a.m. – 10:30 p.m.

■ Student Registration (Garage 1):

- Wed. 9:00a.m. – 5:00 p.m.
- Th. 8:00 a.m. – 5:00 p.m.
- Fri. -Sat. All students will be registered as spectators

■ Information & Volunteer Registration (Garage 1):

- Wed.: 9:00 a.m. – 6:00 p.m.
- Th. – Sat.: 6:30 a.m. – 6:00 p.m.

■ Tech Inspection Sponsored by Cummins, Inc.(Garage 2):

- Wed. 10:00 a.m. Tech “Take-A-Number” Opens
- Wed. Noon - 7 p.m. (no new cars after 6 p.m.)
- Th. 9 a.m. – 5 p.m.
- Fri. By appointment 9 a.m. until 5:30 p.m.
- Sat. By appointment 9 a.m. until 1 p.m. (Re-tech only)

■ Scales & Push Bar Competition (Garage 1 drive thru):

- Wed. 3 p.m. – 6 p.m.
- Th. 8 a.m. – 4 p.m.
- Fri. 7:30 a.m. – Noon (for “cornering”)

■ Tilt/Noise/Brake Sponsored by Continental:

- Th. 9 a.m. – 5 p.m. (Staggered opening times by 30 min. per event)
- Fri. 8 a.m. – 5:30 p.m.

■ Fuel Station:

- Th. 8:30 a.m. – 5 p.m.
- Fri. 8 a.m. – 5 p.m.
- Sat. 7:30 a.m. – 5 p.m.

■ Practice Area Sponsored by Continental (Turn 2; use Gate 12):

- Th. Noon - 5 p.m.
- Fri. 8 a.m. – 5:30 p.m.
- Sat. 8 a.m. – 3 p.m.

NOTE: Cars must complete all 4 parts of tech by 5:30 p.m. Friday to qualify for Endurance.

30 minutes' notice is required for all appointments, which can be booked through the announcer in Main Tent.

2016 FORMULA SAE® MICHIGAN

SCHEDULE OF EVENTS

TUESDAY, MAY 10

5:00 p.m. – 7:00 p.m.

Early Registration for Green Fast Track Teams ONLY

LOCATION

Garage 1

WEDNESDAY, MAY 11

10:00 a.m.

Tech Inspection "Take-a-Number" Opens

5:00 p.m. – 6:00 p.m.

Design Judge Training

5:30 p.m.

Welcome Ceremony - Sponsored by Honda

6:00 p.m. – 6:20 p.m.

Captain and Advisors Meeting

6:30 p.m. – 8:30 p.m.

Invitation-Only Reception

7:30 p.m.

Official Closing of the Site - Everyone must be off site

LOCATION

Garage 2

Garage 3

Main Tent

Main Tent

Champions' Club

THURSDAY, MAY 12

(ALL TIMES PRECEDED BY "~" ARE APPROXIMATE)

8:00 a.m.

Drivers Meeting (Brake & Practice) - Mandatory

8:30 a.m. – 5:30 p.m.

Design Event Sponsored by Bosch - 1st Round Judging Open

9:00 a.m. – 5:00 p.m.

Cost Event Judging Open

9:00 a.m. – 5:00 p.m.

Presentation Event - Judging Open

-11:30 a.m.

Student Lunch Sponsored by Honda *teams numbered TBD

Noon - 1:00 p.m.

Lunch Break

-2:00 p.m. – 3:30 p.m.

Autocross Course Walk (weather permitting)

5:00 p.m.

Push Bar Finalist teams announced (up to 5 teams)

5:00 p.m.

Staging for Panoramic Photo (weather permitting)

5:30 p.m. – 8:30 p.m.

Design Judges Meeting - Judges only

6:00 p.m.

Drivers Meeting (All Dynamic Events) - Mandatory

7:30 p.m.

Official Closing of the Site - Everyone must be off site

-9:00 p.m.

Design Finalists announced online

LOCATION

Main Tent

Garage 3

Main Tent

MIS Suites

Garage 1

Main Tent

Track

Main Tent

Oval behind Suites

Off Site

Main Tent

www.sae.org, www.fsae.com

FSAE FB

FRIDAY, MAY 13

(ALL TIMES PRECEDED BY "~" ARE APPROXIMATE)

7:30 a.m. – 1:00 p.m.

Autocross Walk Open

8:30 a.m.

Course Crew Safety Briefing - Acceleration

8:30 a.m.

Course Crew Safety Briefing - Skid Pad

9:00 a.m. – 12:30 p.m.

Acceleration Event Sponsored by Dodge Open

9:00 a.m. – 3:30 p.m.

Skid Pad Event Open

9:00 a.m. – 4:00 p.m.

Design Feedback for Non-finalists (by appt. only)

9:30 a.m.

Presentation Seminar

-12:00 p.m.

Student Lunch Sponsored by Honda *teams numbered TBD

12:30 p.m. – 1:30 p.m.

Lunch Break

-1:05 p.m.

Course Crew Safety Briefing - Autocross

1:30 p.m. – 5:00 p.m.

Autocross Event Open

-5:30 p.m. – 8:30 p.m.

Design Finals - Sponsored by Bosch

-7:00 p.m.

Award Ceremony 1 Sponsored by General Motors

9:00 p.m.

Official Closing of the Site - Everyone must be off site

IMMEDIATELY FOLLOWING AWARD CEREMONY

LOCATION

Backstretch via Gate 50

Backstretch via Gate 50

Pit Lane

Pit Road

Backstretch via Gate 50

Garage 3

Main Tent

Garage 1

Main Tent

Backstretch via Gate 50

Backstretch via Gate 50

Garage 3

Main Tent

The distance between imagination and... creation



Innovation. Performance. Smart Technology.

Join our exceptional team as we set exciting, new standards in dynamic, global markets for the fastest, smartest, and most efficient Ford vehicles ever.

Opportunities currently available for 2016 and 2017 college graduates, as well as experienced engineers.

Connect with the Ford community at:



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[Twitter.com/FordCareers](https://twitter.com/FordCareers)



[Linkedin.com/company/ford-motor-company](https://www.linkedin.com/company/ford-motor-company)

www.ford.careers.com



Go Further

2016 FORMULA SAE® MICHIGAN

SCHEDULE OF EVENTS

SATURDAY, MAY 14

LOCATION

(ALL TIMES PRECEDED BY “~” ARE APPROXIMATE)

7:00 a.m. – 8:00 a.m.	Ford Endurance Course Walk	Backstretch via Gate 50
8:30 a.m.	Course Crew Safety Briefing	Backstretch via Gate 50
~8:30 a.m.	Top 3 Teams Design Finalists Announced	
~9:00 a.m. – 2:00 p.m.	Design Feedback for Finalists not Top 3, by appointment	Garage 3
9:00 a.m.	Ford Endurance/Fuel Efficiency Event Open - Group 1 Only	Backstretch via Gate 50
~12:00 p.m.	Ford Endurance/Fuel Efficiency Gate Closes for Group 1	Backstretch via Gate 50
~12:30 p.m. - 1:00 pm	Ford Endurance Course Walk	Backstretch via Gate 50
~12:30 p.m.	Lunch Break	Main Tent
1:30 p.m.	Course Crew back on track	Backstretch via Gate 50
~1:35 p.m.	Ford Endurance/Fuel Efficiency Event Open - Group 2 Only	Backstretch via Gate 50
~4:00 p.m.	Ford Endurance/Fuel Efficiency Gate Closes for Group 2	Backstretch via Gate 50
~5:30 p.m.	Public Viewing of Top 3 Design Finalists	Main Tent
~6:00 pm	Public Design Review of Top 3 Finalists	Main Tent
~7:00 p.m.	Presentation Highlights	Main Tent
~8:00 p.m.	Final Awards Ceremony Sponsored by General Motors	Main Tent
10:30 p.m.	Official Closing of the Site - All Teams and Transporters Must Exit IMMEDIATELY FOLLOWING AWARD CEREMONY	

SUNDAY, MAY 15

9:00 a.m. - 2:00 p.m. Site Open ONLY for Pick-Up of Transporters

NOTES

- Site closed to teams May 16, 2016. Teams not shipping cars must remove them by 2 p.m. May 15, 2016.
- No Access During Dynamic Events - Teams may enter site with rigs/trailers/panel trucks ONLY when there are no Dynamic Events running.
- Medical Services - There is no First Aid Station on site. EMS will provide any/all medical attention.
- Overnight Removal of FSAE cars - Removal is allowed, but tech will pull Part 1 of your tech sticker.
- Shipping Cars - Teams shipping cars must have them removed from MIS by 10 a.m. May 16, 2016.
- FM Audio - Announcements can be heard via FM radio (Frequency will be posted in G1 at event).
- Event Closing Times - Acceleration, Skid-Pad & Autocross close exactly at the scheduled time. Your car must cross the starting line before the event closing time to be allowed to complete that run.
- FI in Schools High School Engineering
- Competition - May 13 & 14 in the Champions' Club. FSAE participants are invited to observe from 11 a.m.-12:30 p.m. & 1-5 p.m. Friday; and 9-11 a.m. Saturday.
- Teams who participate in early registration MUST drop off their trucks/trailers in the paddock. No unpacking may be done on Tuesday. Only “Green Light Teams” may participate.
- Student Lunch Sponsored by Honda – Half of the teams will get lunch on Thursday and the other half on Friday. The car numbers will be announced over the PA and teams may pick up their pizzas in G1.
- Teams must have their trailers packed and be ready to leave the site immediately following the Award Ceremony Saturday.

SUPPORT SERVICES

- **GM Machine Trailer:**
 - Wed. - Fri. 9 a.m. - 5 p.m.
- **Lincoln Electric Welding:**
 - Wed. Noon - 5 p.m.
 - Th.-Fri. 8 a.m. - 5 p.m.
 - Sat. 8 a.m. - Noon
- **Hoosier:**
 - Wed.-Fri. 7 a.m. - 5 p.m.
 - Sat. 7 a.m. - 3 p.m.
- **GM Internet Café (GM Recruitment Tent)**
 - Wed. 10 a.m. - 6 p.m.
 - Th - Fri. 8:30 a.m. - 6 p.m.
 - Sat. 8 a.m. - 6 p.m.
- **MIS Fire trucks on site:**
 - Wed. - Sat. 7 a.m. - ~8 p.m.
- **Ambulance on site:**
 - Wed. - Sat. 7 a.m. - ~8 p.m.

ADDITIONAL SERVICES

- **Concessions:**
 - Wed.-Sat 8 a.m. - 6 p.m.*

* As business dictates. May close earlier if deemed appropriate

2016 FSAE MICHIGAN **AWARDS**

SPIRIT OF EXCELLENCE AWARD

This award recognizes the Top 10 finishers with overall highest accumulative scores.

STATIC EVENTS

COST AWARD

This award recognizes the Top 3 finishers with overall highest accumulative scores in Cost.

BOSCH ENGINEERING DESIGN AWARD

This award recognizes the Top 3 finishers with overall highest accumulative scores in Design.

PRESENTATION AWARD

This award recognizes the Top 3 finishers with overall highest accumulative scores in Presentation.

DYNAMIC EVENTS

DODGE ACCELERATION AWARD

This award recognizes Top 3 finishers with fastest speeds/highest accumulative scores in Acceleration.

AUTOCROSS AWARD

This award recognizes Top 3 finishers with fastest speeds/highest accumulative scores in Autocross with a trophy.

FORD ENDURANCE AWARD

This award recognizes Top 3 finishers with fastest speeds/highest accumulative scores in Endurance.

FORD FUEL EFFICIENCY AWARD

This award recognizes Top 3 finishers who receive highest scores accumulated on best fuel efficiency.

SKID PAD AWARD

This award recognizes Top 3 finishers with fastest speeds/highest accumulative scores in Skid Pad.

SPECIALTY AWARDS

ALTAIR ENGINEERING'S WILLIAM R. ADAM ENGINEERING AWARD

Development of new and innovative design concepts for FSAE racing competition - \$1000, \$500

CONTINENTAL BRAKE AWARD

Best in Class Brake design by a team. \$1000

CUMMINS INC. APPLIED TECHNOLOGY AWARD

"Applied Technology" Award for the team that applies technology the most innovatively \$1,000, \$750, \$500

THE FEV POWERTRAIN DEVELOPMENT AWARD

Top 3 teams with overall excellence in Powertrain Development - \$2000, \$1000, \$500

THREE VIEW DRAWING EXCELLENCE AWARD

Awarded up to the top ten Formula SAE teams who submit the best executed three view drawings.

MACLEAN-FOGG FASTENING CHALLENGE AWARD

This award is intended to reward team with the best solution to a fastening challenge at Formula SAE Michigan. - \$1,000

TOYOTA PERSEVERANCE AWARD

\$1,000 This award will recognize the team which demonstrates determined perseverance through the process of their car's design and build. Look for Toyota in the Paddock if you would like to nominate your team for this award.



Hashtag Contest

#boschcampus

#boschtour

**Come visit the Bosch booth
for a chance to win!
Winners don't need to be present.**



BOSCH

Invented for life

Step 1



TAKE A PHOTO

Use your phone to snap
a pic of our booth

Step 2



LIKE US

Like the
Boschcampus
Facebook page

Step 3



TAG & UPLOAD

Tag your photo with
#boschcampus & #boschtour,
upload to the Boschcampus
Facebook page

1st Prize



**Bosch
Power Box**

2nd Prize



**Bosch
Heated Jacket**

3rd Prize



**Bosch
Folding Chair**

2016 FORMULA SAE MICHIGAN

REGISTERED TEAMS

AUSTRIA

- 12 FH - Joanneum Graz
- 3 Graz Technical Univ

BRAZIL

- 13 Faculdade de Engenharia de Sorocaba

CANADA

- 85 Concordia University
- 50 Lakehead Univ
- 39 McGill Univ
- 11 Polytechnique Montréal
- 45 Queen's Univ - Ontario Canada
- 63 Ryerson Univ
- 122 Univ of British Columbia
- 113 Univ of Guelph
- 125 Univ of Manitoba
- 56 Univ of Saskatchewan
- 120 Univ of Toronto
- 21 Univ of Victoria
- 118 Univ of Waterloo
- 117 Univ of Windsor
- 30 Université Du Quebec a Trois-Rivieres
- 114 Université Du Quebec-Chicoutimi
- 62 Université de Sherbrooke
- 88 Université Laval
- 10 Western University

GERMANY

- 93 Fachhochschule Hamburg
- 14 Universität Stuttgart

ITALY

- 17 Universit Degli Studi Di Brescia

MEXICO

- 112 Universidad Autonoma Estado Mexico

SINGAPORE

- 7 National Univ of Singapore

SOUTH KOREA

- 4 Kookmin Univ

UNITED STATES

- 81 Auburn Univ
- 109 Bradley Univ
- 53 Brown Univ
- 43 California Polytechnic State Univ-SLO
- 25 Central Michigan Univ
- 77 Clarkson University
- 44 Clemson Univ
- 90 Colorado Mesa University
- 95 Columbia Univ
- 82 Cooper Union
- 115 Cornell Univ
- 99 Duke Univ
- 98 Embry-Riddle Aero Univ - Daytona Beach
- 33 Ferris State University
- 18 Florida Atlantic Univ
- 94 Florida Inst of Tech
- 73 Florida International Univ
- 91 Georgia Institute of Technology
- 48 Georgia Southern Univ
- 68 Hope College
- 126 Indiana Univ Purdue Univ Indianapolis
- 123 Kansas State Univ
- 69 Kennesaw State University
- 66 Kettering Univ
- 27 Lafayette College
- 55 Lawrence Technological Univ
- 106 Lehigh Univ
- 34 Louisiana State Univ
- 23 Michigan State Univ
- 96 Michigan Tech Univ
- 97 Minnesota State University - Mankato
- 64 Mississippi State Univ
- 16 Missouri University of Science and Tech
- 78 North Carolina State Univ - Raleigh
- 110 Northern Illinois Univ
- 47 Ohio State Univ
- 54 Oklahoma State Univ
- 75 Old Dominion Univ
- 1 Oregon State Univ
- 37 Penn State Univ - University Park
- 51 Purdue Univ - Calumet
- 67 Purdue Univ - W Lafayette
- 46 Rensselaer Polytechnic Inst
- 61 Rochester Institute of Technology
- 40 Rose Hulman Inst of Tech
- 102 Rutgers Univ
- 100 Saginaw Valley State Univ
- 128 San Jose State University
- 124 South Dakota State Univ
- 103 Southern Illinois Univ - Edwardville
- 49 Tennessee Tech Univ
- 19 Texas Tech Univ
- 65 US Air Force Academy
- 57 US Naval Academy
- 76 Univ of Alabama - Tuscaloosa
- 26 Univ of Central Florida
- 74 Univ of Cincinnati
- 105 Univ of Connecticut
- 70 Univ of Evansville
- 2 Univ of Florida
- 108 Univ of Hartford
- 104 Univ of Illinois - Urbana Champaign
- 20 Univ of Kansas - Lawrence
- 121 Univ of Kentucky
- 32 Univ of Maryland - College Park
- 5 Univ of Michigan - Ann Arbor
- 8 Univ of Michigan - Dearborn
- 52 Univ of Minnesota - Twin Cities
- 107 Univ of Minnesota-Duluth
- 87 Univ of Missouri
- 22 Univ of New Hampshire
- 59 Univ of North Carolina - Charlotte
- 72 Univ of North Florida
- 42 Univ of Pittsburgh - Pittsburgh
- 83 Univ of South Florida
- 80 Univ of Texas - Arlington
- 116 Univ of Toledo
- 89 Univ of Utah
- 15 Univ of Wisconsin - Madison
- 79 Villanova Univ
- 6 Virginia Tech
- 127 Washington State Univ
- 60 Washington Univ - St Louis
- 92 Wayne State Univ
- 29 West Virginia Univ
- 58 Worcester Polytechnic Inst
- 41 York College of Pa

PUERTO RICO

- 36 Turabo Univ
- 38 Univ of Puerto Rico-Mayaguez

VENEZUELA

- 71 Universidad Central de Venezuela
- 35 Universidad Metropolitana
- 101 Universidad Simon Bolivar

ENGINEERING IS MORE THAN ENGINEERING



Kyle Steinkamp
Driver / Co-Driver



Brian Thurgate
Driver / Co-Driver



OUR ENGINEERS DON'T JUST CREATE SOME OF THE BEST CARS ON THE PLANET...
THEY RACE THEM.



TOYOTA

Let's Go Places

toyota.com/careers

Toyota R&D Headquarters Ann Arbor and Saline, Michigan

Stop by our booth in Paddock Stall #1 and check out our Rally Team, get a free gift and let's talk about turning your great engineering EDUCATION into a great engineering CAREER.*

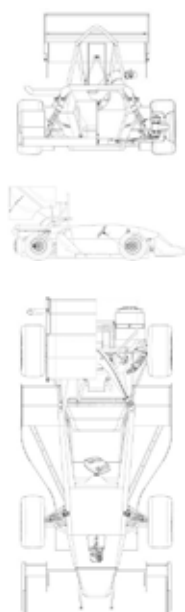
*While supplies last.

Oregon State Univ

Global Formula Racing



Global Formula Racing is an internationally collaborative FSAE team from Oregon State University and DHBW Ravensburg. Together we build two cars, one combustion, one electric, every year, sharing chassis, aerodynamics and suspension packages. We are looking forward to seeing you in Michigan and we are pleased to answer any of your questions about our team and the car so stop by our pit!



BRAKE : Brembo AP calipers, Tilton master cylinders, student designed rotors
BSCD : 96mm bore / 62.1 mm stroke / 1 cylinder / 449cc
COOLING : Rear mounted oil and water coolers / 625 cfm 9" fan
DRIVE : Chain drive
ELECTRONICS : Motec
ENGINE : Honda CRF450X
FR/RR TRACK : 1125 mm
FRAME : CFRP monocoque
FUEL SYSTEM : Honda CRF450R injector
FUEL TYPE : 93 octane
MATERIAL : Carbon, steel, aluminum, plastic
MPD : 10,000RPM
MPT : 8,000RPM
OLWH : 2835 mm long, 1345 mm wide, 1200 mm high
SUSPENSION : Direct acting shocks
TIRE : Hoosier
UNIQUE : German-American heritage
WEIGHT : w/ 150 lb driver: 480
WHEELBASE : 1535 mm

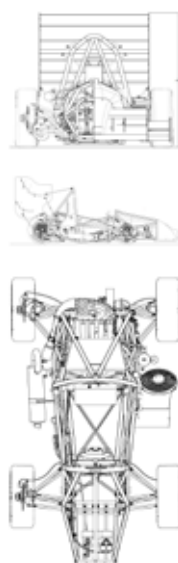


Univ of Florida

Gator Motorsports



The F16 is a refined version of the typical FSAE vehicle platform; It is a steel spaceframe, propelled by a 600cc motorcycle engine, help up with unequal length double wishbone suspension geometry.



BRAKE : Custom steel rotors and Brembo motorsport calipers
BSCD : 67mm, 42.5mm, 4, 599cc
COOLING : Water cooled with electric pump
DRIVE : Chain drive to custom sprocket and Torsen differential
ELECTRONICS : Motec PDM, ECU, ADL
ENGINE : Honda CBR600RR
FR/RR TRACK : 1219mm (48in), 1194mm (47in)
FRAME : Chromoly Spaceframe
FUEL SYSTEM : Custom tank, rail, and injector sizing
FUEL TYPE : 93 octane petrol
MATERIAL :
MPD : 9500
MPT : 8000
OLWH : 2974 (117.1in), 1415mm (55.7in), 1200(47.2in)
SUSPENSION : Double unequal length composite A-Arms. Pull rod actuation
TIRE : 20.5x7.0-13 R25B Hoosier
UNIQUE :
WEIGHT : 585
WHEELBASE : 2950mm (61in)



GENERAL MOTORS



CREATING NEW WAYS TO MOVE.

At General Motors, we adhere to the same principles that underline the Formula SAE philosophy—unceasing collaboration, constant innovation and unrelenting spirit.

We are boldly ushering in a new era of transportation, harnessing tomorrow's technology for our vehicles. To further our pursuit of excellence, GM Powertrain has evolved into GM Global Propulsion Systems, reflecting our diversified lineup of propulsion and alternative fuel technologies—including vehicle electrification, hydrogen fuel cells, and advanced 6- to 10-speed and continuously variable transmissions. With the addition of our new state-of-the-art Performance and Racing Center, our expert engineers join forces in powertrain design and development to give our racers a competitive edge on the track and our customers enhanced performance on the road.

The automotive industry is in the midst of a thrilling shift, and now's your chance to be part of history in the making. Explore a career with GM, where your ambition, creativity, and skills will be challenged beyond the limit. Because we're doing more than manufacturing cars—we're redefining mobility.



CAREERS.GM.COM



GM 2016. The policy of General Motors is to extend opportunities to qualified applicants and employees on an equal basis regardless of an individual's age, race, color, sex, religion, national origin, disability, sexual orientation, gender identity expression or veteran status.



The final goal of the race competition is to pull out the ultimate performance from a machine and a driver. In pursuit of this goal, it is pivotal to harmonize skills of a driver.

With the machine while maximizing mechanical performance of the vehicle. Our vehicle is designed to squeeze out the maximum power from the machine while harmonizing with the feel and the character of the driver.

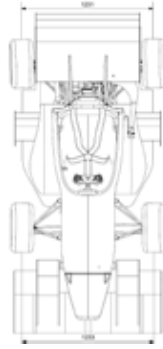
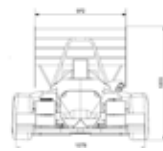
For 2016 FSAE Competition, 13 inch 7J tires are adopted to increase contact surface and an aerodynamic system (wing and diffuser) producing dependable downforce is implemented to ensure the solid tire grip. Also, in order for the driver to easily manipulate the vehicle, better driver ergonomics are designed to improve the convenience and responsiveness of the driver. Furthermore, the vehicle settings are finely tuned based on the experimentally measured data while paying close attention to the comments from the driver to establish the objective data base of the vehicle setting for the future improvement.



BRAKE : Front, Rear AP Racing Calipers
BSCD : 67.0mm/42.5mm/4 Cylinder/599cc
COOLING : Side Mounted Aluminum Radiator with ECU controlled electric Fan
DRIVE : Honda 520 Chain Drive, Drexler Differential
ELECTRONICS : Haltech ECU
ENGINE : Honda CBR600RR
FR/RR TRACK : 1170mm/1140mm
FRAME : Steel Tube Space Frame
FUEL SYSTEM : Sequential Injection
FUEL TYPE : 100 Octane
MATERIAL : 1020 Steel Round Tubing, 25.4mm, 1.25 to 2.4 Wall Thickness
MPD : 11000
MPT : 10300
OLWH : 3018mm/1366mm/1190mm
SUSPENSION : Double Unequal Length A-Arm, Front Push Rod Rear Pull Rod Actuated Spring
TIRE : 21.0x7.0x13 R25B Hoosier
UNIQUE :
WEIGHT : 657lbs
WHEELBASE : 1535mm



VTM16 is the 25th vehicle produced by Virginia Tech Motorsports for competition in Formula SAE sanctioned events. The team established quantifiable goals and a formal testing program to validate the predictive models used for system level designs. A light-weight, fuel efficient vehicle platform incorporating a carbon fiber monocoque chassis and single-cylinder engine was selected. Launch control and simple driver controls systems have been implemented to aid an amateur driver. A complete aerodynamic package was designed to increase the tractive limits of the Hoosier LCO tires on 10 inch carbon fiber wheels. The car is powered by a Yamaha WR450FB engine controlled by a MoTeC M400 engine management system. An adjustable limited-slip differential allows the torque bias ratio to be tuned for acceleration and deceleration events. The suspension, powertrain, electrical, aerodynamics, and ergonomic systems were designed, analyzed, and tested in order to ensure drivers from amateur to professional skill level are capable of consistently driving the car at its tractive limit and able to win the FSAE competition.



BRAKE : Slotted floating rotor, AP racing calipers
BSCD : 95 mm/63.4 mm/1 cyl/449 cc
COOLING : Sidepod ducted radiator
DRIVE : Chain drive, stock gearbox, Drexler LSD
ELECTRONICS : MoTeC M400 ECU
ENGINE : Yamaha WR450FB
FR/RR TRACK : 1233 mm/1231 mm
FRAME : Hybrid CFRP monocoque, steel tube space-frame
FUEL SYSTEM : Port injection, Nytro 324 ccm
FUEL TYPE : 93 octane
MATERIAL : Carbon fiber, aluminum, steel, titanium, magnesium
MPD : 29 kW @ 9000 rpm
MPT : 39.5 Nm @ 7000 rpm
OLWH : 2994 mm/1434 mm/1203 mm
SUSPENSION : Double unequal length A-arm with pullrod actuated coil springs/dampers
TIRE : 18x6.0-10 Hoosier LCO
UNIQUE :
WEIGHT : 236 kg
WHEELBASE : 1534 mm



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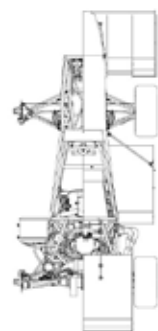
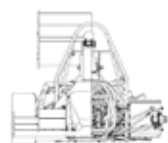
Honda R&D Americas Inc.



The National University of Singapore unveils its 2016 entry to the Formula SAE Michigan Competition. After surpassing all expectations in the 2015 season, NUS FSAE is itching to get back on the Michigan International Speedway with its latest racing machine, the R16.

Power and stability out of every corner was the design mantra for the R16. Extensive simulations with Computational Fluid Dynamics (CFD) was used to design aerodynamic elements. Engine simulations and refinements to the intake and exhaust systems were done to flatten the torque curve increase the horsepower from the Honda CBR 600RR engine. An added focus on consolidating components and creative packaging has resulted in NUS FSAE's most compact engine bay. The R16 has undergone 4 months of rigorous testing and fine tuning ensure reliability and precision in performance.

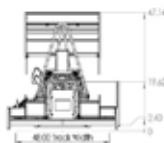
The team is grateful for all the support from the university, sponsors, family and friends which has made this car a reality.



BRAKE : Dual Circuit Hydraulics
BSCD : 67mm / 42.5mm / 4 cyl / 599cc
COOLING : Single Pass w/ Electric Water Pump
DRIVE : Chain
ELECTRONICS : MoTeC M800 ECU
ENGINE : Honda CBR600RR
FR/RR TRACK : 1220 mm/ 1210 mm
FRAME : 4130 Steel Spaceframe with CFRP-PVC Foam Shear Panels
FUEL SYSTEM : Custom Aluminium Fuel Tank, EFI
FUEL TYPE : 93 Octane
MATERIAL : Steel, Aluminium, CFRP
MPD : 66 Hp @ 11600
MPT : 52 Nm @ 8000
OLWH : 2912 mm, 1437 mm, 1195 mm
SUSPENSION : Front Pull, Rear Push SLA
TIRE : 18.0x6.0-10 Hoosier LCO
UNIQUE : Rapid Prototype Intake, Dry Sump Engine Lubrication
WEIGHT : 619 lb
WHEELBASE : 1535 mm



The design of the 2016 University of Michigan-Dearborn Formula SAE car centered around producing an easy-to-drive vehicle in a timely manner so as to allow for extensive driver training, vehicle tuning, and design verification and validation. The performance expectations are to place in the top ten in Formula SAE dynamic events. This resulted in a vehicle system level design that focused on maximizing available grip and downforce, while decreasing vehicle weight.



BRAKE : Cast Iron Floating Rotors, ISR calipers (front), AP Racing calipers (rear)
BSCD : 77mm/53.6mm/2 cylinders/499cc
COOLING : 1.5in core aluminum radiator, 745 cfm fan
DRIVE : CVT to chain drive
ELECTRONICS : Bosch MS3 Sport ECU, Bussman Power Distribution Box, AIM EVO4 Data Logger
ENGINE : Yamaha Genesis 80fi
FR/RR TRACK : F: 48in / R: 48 in
FRAME : 4130N Welded Steel Space Frame
FUEL SYSTEM : Aluminum dual compartment fuel tank, Denso High Impedance Injectors
FUEL TYPE : E85
MATERIAL : Carbon Fiber, Steel, Aluminum
MPD : 11,500
MPT : 9,000
OLWH : 121.2in/57.3in/47.24in
SUSPENSION : Front: Pushrod SLA; Rear: Pushrod Multi-Link SLA w/Virtual Upper Balljoint
TIRE : 18.0x6.0-10.0 Hoosier LCO
UNIQUE : Unsprung Aerodynamics
WEIGHT : 560 lbs
WHEELBASE : 66 in



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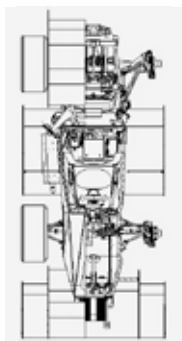
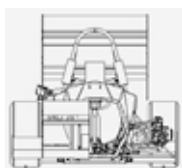
10

Western University Western Formula Racing



Western Formula Racing is the FSAE team from Western University in London, Canada. Beginning in 1988, we've competed every year since 1996. Our team has a philosophy of Excellence, Endurance, and Enthusiasm: building highly skilled and effective professionals; ensuring the long term success of the team; and having fun!

WFR-16 features one of the skinniest cars at competition for improved driving line. We've also built our team's second monocoque and very first composite wheels and brake rotors. WFR-16 features several driver aids such as: ABS (Anti-Lock Braking System), DRS (Drag Reduction System); along with traction control and auto up-shifting in testing. We also pride ourselves on our world class ergonomic package. WFR-16 also focused on tuning aids including driver adjustable anti-roll bars, and brake bias. We continue to use 13" rims for increased grip and our aerodynamics package utilizes sidewings as well as multi-plane front and rear wings.



BRAKE : Floating Ductile Iron Rotors, Tilton Master Cylinders, IRS Caliper
BSCD : 67/42/4/600
COOLING : Rear Mounted 2 Core Rad
DRIVE : Chain Drive, Drexler Diff
ELECTRONICS : AEM EMS4 ECU, EV03 Pro DAQ
ENGINE : Honda CBR600 F4i
FR/RR TRACK : 1074/1074
FRAME : CFRP Front Monocoque/Rear Space Frame
FUEL SYSTEM : Returnless EFI with Custom Aluminum Fuel Tank
FUEL TYPE : 93
MATERIAL : Varies by Application
MPD : 11000
MPT : 9500
OLWH : 2967/1315/1180
SUSPENSION : Double Unequal Length Wishbone, Pull-rod Front, Push-rod Rear
TIRE : 20" X 7.5" - 13 R25B Hoosier
UNIQUE : Narrow Track Width, Driver Adj ARB and Brake Bias, Antilock Braking System
WEIGHT : 635
WHEELBASE : 1525



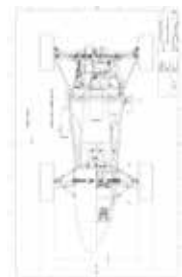
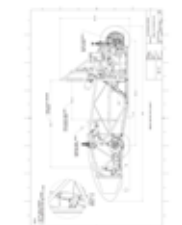
11

Polytechnique Montréal Formule Polytechnique Montreal



Formule Polytechnique Montreal 2016 uses a tubular steel space frame chassis powered by a 450 cc single cylinder engine producing 40 hp. The pushrod actuated suspension keeps the 10-inch Hoosier tires on the track and an undertray/diffuser is being tested to validate if aerodynamics would be a valuable addition to the car.

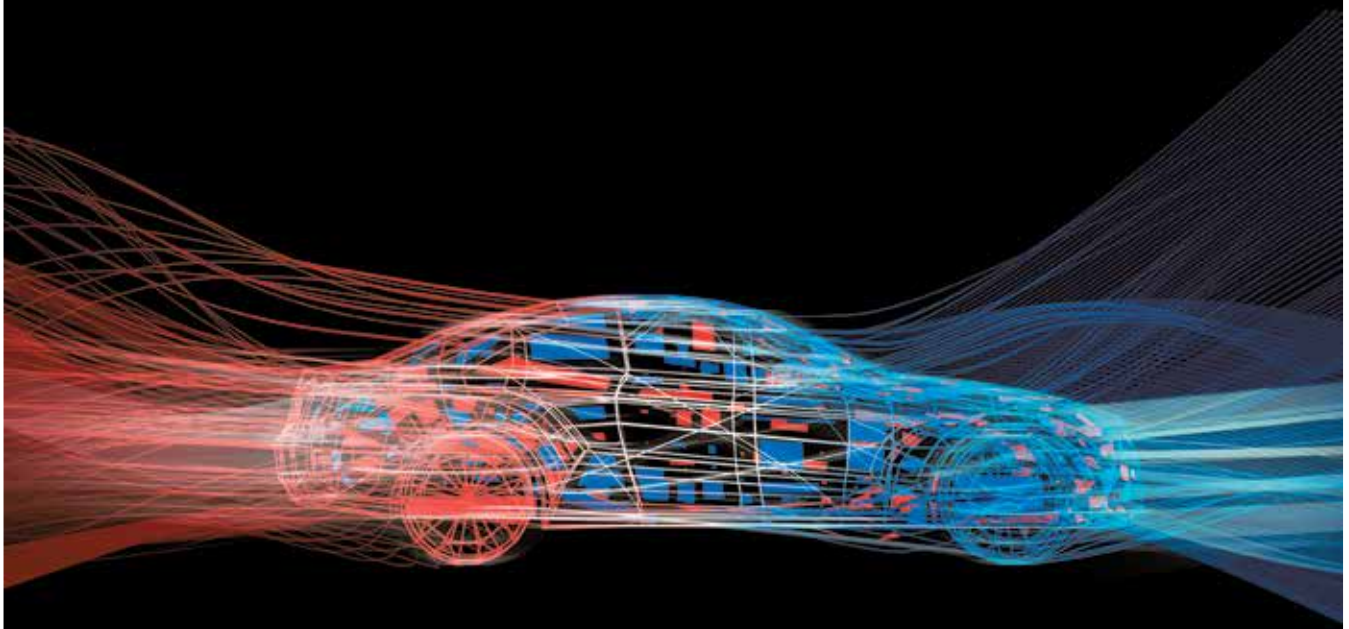
This vehicle represents Polytechnique Montreal's entry at the 2016 Michigan Formula SAE event and it is the second iteration of the clean-sheet 2015 design.



BRAKE : Front: 4 piston calipers, Rear: 2 piston calipers
BSCD : 450 cc single cylinder, 11.7 compression ratio
COOLING : Water cooled
DRIVE : Chain drive with sequential gearbox
ELECTRONICS : PE3 ECU
ENGINE : BRP ROTAX DS450
FR/RR TRACK : 1235 mm
FRAME : Tubular spaceframe
FUEL SYSTEM : Electronic Fuel Injection
FUEL TYPE : Gasoline, 94 octane
MATERIAL : 4130 steel tubing
MPD : 43 hp @ 10 000 rpm
MPT : 27.5 ft-lbs @ 8500 rpm
OLWH : L:2721, W:1388, H:1079 (mm)
SUSPENSION : Pushrod, double arms
TIRE : Hoosier, 10"
UNIQUE :
WEIGHT : 420 lbs
WHEELBASE : 1625 mm



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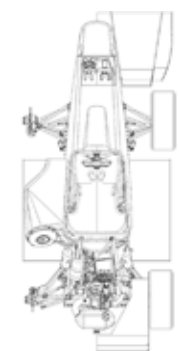
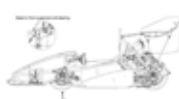
MOTION AND MOBILITY



The Austrian team known as "The Weasels" from the University of Applied Sciences FH Joanneum in Graz was founded in 2003 and is known for its innovative FS race cars with charged engines ever since.

The team changes all of its members every year so the cars are always built by a new group of engineering students. Combining fresh ideas with many years of experience guarantees the evolution of the cars and resulted in this season's car, the jr15.

It has a hybrid chassis with a CFRP monocoque and a tubular rear spaceframe holding the engine. It is already the third development stage of the self-made, turbocharged 2-cylinder engine with piezo direct injection and electro-pneumatic shifting actuation. The suspension was designed for racing with Continental tires that are fitted on hand-laminated three-spoke one-piece 13" CFRP rims. A CFD-simulated aerodynamic package contributes to the perfect handling and guarantees not only a stunning appearance but also amazing cornering speeds. Like the high-end parts of the car are functioning together with perfection, so is the team of joanneum racing graz working as one to reach their goals and prove to be one of the best FS teams in the world.



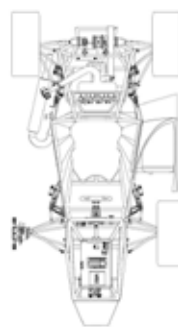
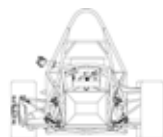
BRAKE : 2-circuit brake system with ABS
BSCD : 83 mm / 55 mm / 2 / 595 cc
COOLING : Water cooled, sidewing mounted one core 92'840 mm² radiator and 802 cfm fan
DRIVE : Gearwheels and differential integrated in gearbox
ELECTRONICS : Electropneumatic shifting/clutch actuation, durable wiring harness
ENGINE : Student designed, self-developed and tested
FR/RR TRACK : 1220 mm / 1180 mm
FRAME : CFRP monocoque sandwich construction with tubular steel rear frame
FUEL SYSTEM : High pressure direct injection with piezoelectric injectors (Bosch)
FUEL TYPE : RON 93
MATERIAL : Cast aluminium crank case, titanium conrods and tungsten balancing shafts
MPD : 67 kW @ 5500 rpm
MPT : 133 Nm @ 4500 rpm
OLWH : 2995 / 1434 / 1200 mm
SUSPENSION : Double unequal length A-Arm, pull rod actuated spring/damper, adj. roll bar
TIRE : Continental 205/510 R13 - 34M
UNIQUE : Motorsport ABS, multi-functional steering wheel, traction and launch control
WEIGHT : 278 kg
WHEELBASE : 1540 mm



V8 Racing team participated for the first time in Formula SAE BRASIL competition in 2005 and ever since gained good results and experience, always innovating and perfecting designs every year, with all these important things together, the team are able to providing the opportunity to look for new goals and challenges, enabling improvement.

Joined by the same goals and the same passion for car, V8 Racing Team brings the new prototype, named F-XV. Designed for high performance without forgetting the safety and handling, also focusing on mass reduction and using a high variety of tools of modern engineering to assist in the project.

The project is maintained by the college and Sorocaba's industries that are concerned about the national education and its future employees, so the sponsors are very important for the project to be done.

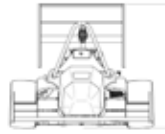


BRAKE : 4 Floating Rotors, Tilton 77-Series Master Cylinder
BSCD : 67mm/42.5mm/599cc
COOLING : Single side mounted radiator with fan
DRIVE : Chain Drive, Drexler Differential
ELECTRONICS : Megasquirt 2/ AIM MXL Pista 2
ENGINE : Honda CBR600RR
FR/RR TRACK : 1220mm/1160mm
FRAME : Tubular Spaceframe
FUEL SYSTEM : Semi-sequential Fuel Injection
FUEL TYPE : 93 Octane
MATERIAL : STEEL SAE 1020
MPD : 10800
MPT : 10300
OLWH : 2738mm/1433mm/1180mm
SUSPENSION : Double unequal length A-arms, Ohlins TTX25 dampers
TIRE : 20.5x7x13/ 20x7.5x13 Hoosier R25B
UNIQUE : Carbon fiber flat floor/Hoonigan Drivers
WEIGHT : 290.6Kg
WHEELBASE : 1560





"Compete - Finish - Win!" This is our motto and main goal which we kept alive over the past ten years. Our jubilee-car, the "F0711-10", is characterized by outstanding engineering expertise: long approved systems in combination with highly innovative technologies. Getting maximum points at the event is our number one priority.

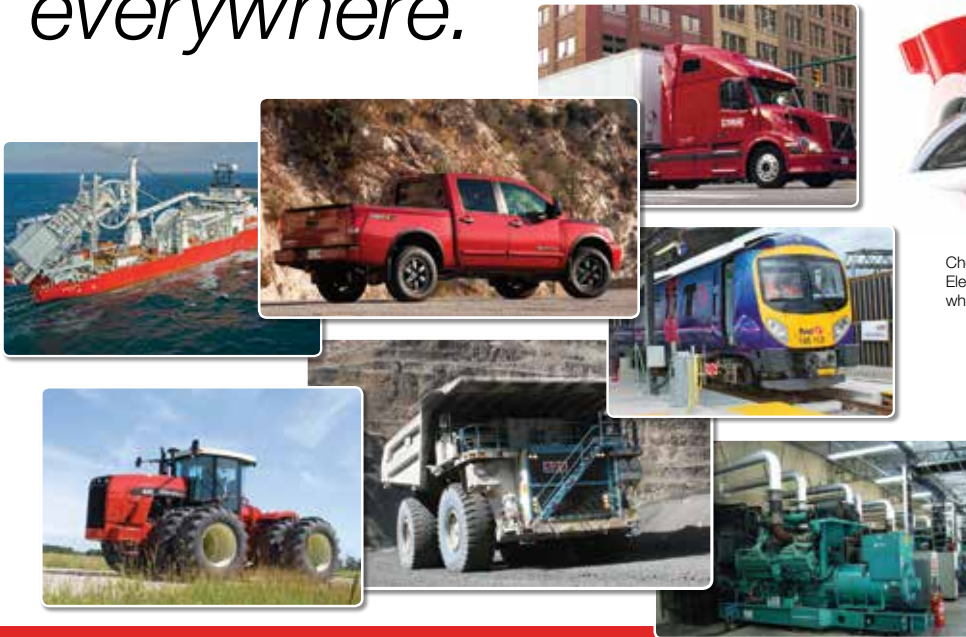


BRAKE : F/R: 4/2 Piston ISR Calipers, floating steel / aluminium disc
BSCD : 65,5 mm / 44,5mm / 4 cylinders / 599ccm
COOLING : left sidepod mounted 1 core self designed radiator, 2 fans backside
DRIVE : suter GP2 Clutch/ self designed 4 speed gearbox / Chaindrive / Drexler LSD
ELECTRONICS : LiFePo, charging via alternator, Motec Dash Logger, digital steering wheel
ENGINE : Yamaha YZF R6 RJ09
FR/RR TRACK : 1140mm / 1120mm
FRAME : Singlepiece CFRP Monocoque / detachable steel tube rearframe
FUEL SYSTEM : student build fuel injection system / 2 fuel rails
FUEL TYPE : E85
MATERIAL : many various
MPD : 62,5 kW
MPT : 68 Nm
OLWH : 3050mm/ 1363mm / 1190mm
SUSPENSION : unequal length A-Arms, driver adjustable U-ARB, heave-spring/damper
TIRE : 10x7,5x18 R25B Hoosier
UNIQUE : Heavespring system, digital Steering wheel, self designed gearbox, DRS
WEIGHT : 251 kg / 553 lbs
WHEELBASE : 1630mm

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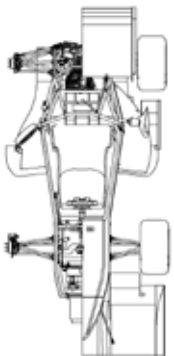
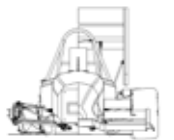


Wisconsin Racing would like to present the WR-216. This car integrates an advanced turbocharged single-cylinder powertrain with an optimized hybrid front CFRP monocoque-rear steel space frame chassis and an aggressive aerodynamic package.

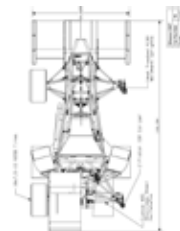
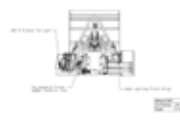
Wisconsin Racing would also like to give special thanks to all of our sponsors and supporters that helped make this car possible.



Missouri S&T's 2016 Formula SAE car relies on a high down force, high horse-power platform. The vehicle is powered by a 4 cylinder Kawasaki ZX-6R engine, and utilizes an un-equal length double A-arm suspension and semi-unsprung aerodynamics package to ensure optimum tire contact. The car first drove on Feb. 19 and has undergone an extensive testing and tuning season. S&T Racing would like to thank our family, friends, and sponsors for supporting us throughout the year. Thank you.



BRAKE : Wilwood Front Calipers, AP Racing Rear Calipers, Custom Rotors
BSCD : 100 [mm] / 77 [mm] / 1 / 605 [cc]
COOLING : Single dual pass with fan
DRIVE : 520 Chain, Drexler Differential
ELECTRONICS : Mototron ECU, AIM EVO3 Pro DAQ, LCD Steering Wheel Display
ENGINE : KTM 525-EXC, Turbocharged, Single-Cylinder
FR/RR TRACK : 1219 [mm] / 1168 [mm]
FRAME : Hybrid CFRP Monocoque and Tubular Steel Spaceframe
FUEL SYSTEM : Student-designed Fuel Injection
FUEL TYPE : E85
MATERIAL : Prepreg CFRP, 4130 Steel, 7075 Al, 2124 Al, Inconel, 300M, Ti-6Al-4V
MPD : 62 [kW] @ 7600 [rpm]
MPT : 82 [Nm] @ 6000 [rpm]
OLWH : 2982 [mm], 1485 [mm], 1200 [mm]
SUSPENSION : Double Unequal Length A-Arm, Pullrod Front, Pushrod Rear
TIRE : 10" Hoosier
UNIQUE : Electronic Throttle, Electronic Shifting, Electronic Clutch, Hybrid Monocoque
WEIGHT : 235 [kg]
WHEELBASE : 1575 [mm]



BRAKE : Front ISR 4 Piston Monobloc, Rear 2 Piston Monobloc
BSCD : 67mm/42.5mm/4/600cc
COOLING : Two Single Pass Radiators
DRIVE : Chain Drive
ELECTRONICS : Battery 6Ah A123 LiFePO4 Cells, AIM Evo 4, MoTec M600
ENGINE : 2012 Kawasaki ZX-6R
FR/RR TRACK : 1219mm/1194mm
FRAME : Tubular Space Frame
FUEL SYSTEM : Custom
FUEL TYPE : 100 Octane
MATERIAL : 4130 Steel
MPD : 11000
MPT : 9500
OLWH : 3031mm/1448mm/1193mm
SUSPENSION : Un-Equal Length Double A-arm
TIRE : 18x7.5-10 Hoosier R25B
UNIQUE : Semi-unsprung Aerodynamics Package
WEIGHT : 588lb
WHEELBASE : 1625



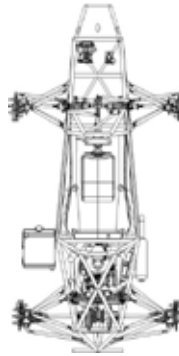
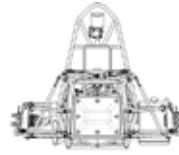


UniBS Motorsport is a preetty young team since it was born in 2014 and Brixia2 is the second car ever built at Università degli Studi di Brescia. The car's name Brixia2- is the name of our city in latin language, and the original number 82 is the fundation year of our University

We partecepatet in FSAE Italy in 2014 with our first car Brixia1 and we had a blast with Formula Student event and ist environment, so in 2015 we put all the knowledge and experience acquired into the project of a second car, with which we attended two further events: FSA and FSAE Italy 2015.

We do love combustion engine so we put a small, loud and wicked two-cilinder Aprilia 550cc engine in our back. The brain that controls this noisy heart is an advanced Magneti Marelli ECU and gear shifting, a well-known Italian heritage. We want our drivers to feel the emotions of a real racecar, so we paid a lot of attention also in vehicle dynamics and driver egonomics.

UniBS Motorsport and Brixia2 are ready to fly to the States (even without wings!!) to continue their Racing Dream!



BRAKE : Brembo calipers and master cylinders
BSCD : 80/55/2/553
COOLING : Frame mounted radiator
DRIVE : Chain, Drexler differential
ELECTRONICS : Magneti Marelli
ENGINE : Aprilia SXV 550
FR/RR TRACK : 1200/1150
FRAME : 25CrMo4 steel TIG welded
FUEL SYSTEM : Indirect electronic sequential multi point fuel injection
FUEL TYPE : RON 98
MATERIAL : Carbon Fibre Bodywork
MPD : 10800
MPT : 9000
OLWH : 2911,1380,1194
SUSPENSION : DBwishbone with pushrod and single blade ARBs
TIRE : 180/530 R13 Pirelli DM
UNIQUE : Advanced material drivetrain, Electronic Throttle control
WEIGHT : 268kg/591lbs
WHEELBASE : 1620

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Owls Racing



Florida Atlantic University is excited to present OR-16 as the exclusive Owls Racing 2016 vehicle entry to the Formula SAE Michigan Event. The OR-16 model is the result of thousands of hours of testing and refinement over the previous year's car. Key objectives for the OR-16 design include the efficient use of test data to optimize design, reliability, serviceability, and reducing vehicle mass. Through these implementations OR-16 distinguishes itself as a thorough refinement over its predecessors.

Florida Atlantic University is excited to be a part of SAE International's Formula SAE Series and to witness the culmination of our efforts results in a strong finish at FSAE Michigan 2016.

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Texas Tech Univ

Red Raider Racing



Learning from past seasons, the main objective for this year was to design for maintenance and modularity. Our goal was to make the car as easy to work on as possible. Special care was taken to make sure all major components were easily accessible and minor adjustments did not require half the vehicle to be disassembled. In successfully modeling all the little parts and pieces, we were able to make sure everything could be removed with minimal effort while still maintaining their effectiveness. Steps have also been taken to make swapping out components much easier than before, so we can spend less time fixing things and more time out on the track!

We would also like to thank all our new and returning sponsors their support this season

Good luck to all. Wreck'em Tech!



BRAKE : 4 floating rotor, 4340, Brembo p32g
BSCD : 67.5mm/42.5mm/4-Cylinder/610cc
COOLING : Single side mounted radiator
DRIVE : 520 Chain Drive
ELECTRONICS : Bosch MS4 Sport
ENGINE : Suzuki GSX-R600
FR/RR TRACK : FR: 1,282 mm/50" RR: 1,251 mm/49.25"
FRAME : 4130 Chromoly
FUEL SYSTEM : Sequential, Multi-Port Fuel Injection
FUEL TYPE : 100 Octane
MATERIAL : Carbon fiber/4130 steel/6061 T-6 Aluminum
MPD : 11,500 RPM
MPT : 9,500 RPM
OLWH : 2,724mm/1,440mm/1,175mm
SUSPENSION : Double wishbone push-rod actuated
TIRE : Hoosier 20.5x7.0-13 R25B
UNIQUE : Overdriven outboard shocks
WEIGHT : 474 lbs Wet/624 lbs Driver
WHEELBASE : 1,579 mm/62"



BRAKE : Wilwood PS-1 Aluminum, 1.25in piston in front, 1in piston in rear
BSCD : Bore: 95 mm, Stroke: 63.4 mm, 1 Cylinder, 449 cc
COOLING : Dual, Single core aluminum radiators
DRIVE : ATB Chain Drive, 34 tooth sprocket
ELECTRONICS : PE3 ECU, black magic smoke
ENGINE : Yamaha YFZ450R
FR/RR TRACK : F 1143mm, R 1092.2mm
FRAME : Tubular Space Frame
FUEL SYSTEM : Bosch 36lb/hr Injector
FUEL TYPE : 93 Octane
MATERIAL : 4310 Chromoly Steel
MPD : 8000
MPT : 6500
OLWH : L 2464mm, W 1334mm, H 1092mm
SUSPENSION : Independently sprung through bellcrank with anti-roll bar
TIRE : Hoosier 18.0x6.0-10 R25B
UNIQUE : Beer Tap Handle Clutch Lever
WEIGHT : 525lbs
WHEELBASE : 1549.4mm





For this year's vehicle design, each system created objective design metrics influenced from previous competition data, vehicle simulations and qualitative parameters. Based on these metrics, key design decisions including the engine, differential system, wheel size, frame design, and engine control module (ECM) choices were made.

The overall results from the metrics and team design review include: running a Honda CBR600 F4i power plant and changing its location within the frame; running a Torsen T1 differential with a custom housing; using a tire rim diameter of 13 inches; running a steel space frame and switching ECMs.

Based on last year's performance at Michigan, the team identified three key events to improve upon for the 2016 season. These areas for improvement were identified as the Business Presentation, Cost Report, and Skid Pad events.

This year's goals were to place 15th at competition in Michigan, improve system integration, reduce overall vehicle weight by setting system-specific weight reduction goal without sacrificing reliability, and allow for additional, simplified adjustability.



BRAKE : Floating cast iron rotors, Brembo P34 calipers, Tilton 77 master cylinders

BSCD : 67mm/42.6mm/4/599cc

COOLING : Custom radiator core with front and rear ducting

DRIVE : Chain drive, custom Torsen T1 differential, 4:1 final drive ratio

ELECTRONICS : LifeRacing F88RX ECM, custom PDU

ENGINE : Honda CBR600F4i

FR/RR TRACK : 1270mm/1240mm

FRAME : 4130 chromoly steel tube space frame, TIG welded

FUEL SYSTEM : Custom fuel tank

FUEL TYPE : 100 octane

MATERIAL : Carbon fiber body

MPD : 70.8 kW at 12,500 rpm

MPT : 73.2 Nm at 8,250 rpm

OLWH : 2993mm, 1270mm, 1181mm

SUSPENSION : Double unequal length a-arm, pull rod actuated spring and damper

TIRE : 20.5x7-13" R25B Hoosier

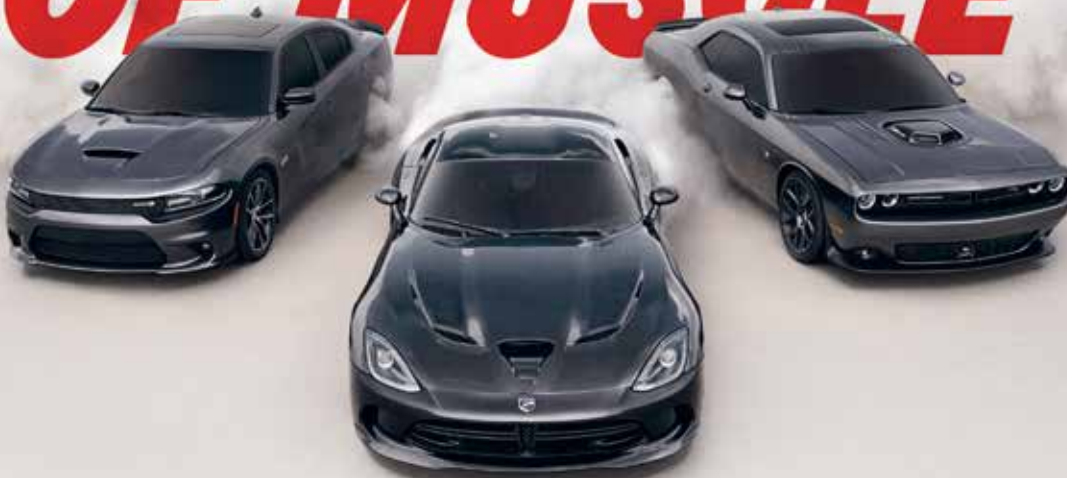
UNIQUE : Custom differential housing, 3D printed intake, oil pan, valve cover

WEIGHT : 660 lbs

WHEELBASE : 1575 mm



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Michigan State University's Formula SAE Team would like to present this year's car, the SR-16. The SR-16 utilizes a hybrid front monocoque and a rear space frame chassis to provide packaging, cooling, and accessibility advantages. A Honda CBR600RR engine is incorporated to provide reliability and quick acceleration with a 0-60 time of 3.4 seconds. Michigan State's newest vehicle also possesses a fully tunable suspension system that was designed around the 18" tire. Over 70 sensors are integrated to monitor vehicle and driver performance, along with design validation. Additional features include electro-pneumatic paddle shifting, traction control, and launch control to create a simple car-driver interface.

We thank Michigan State University and all of our sponsors, friends, and families for their contributions and support towards this invaluable learning experience.

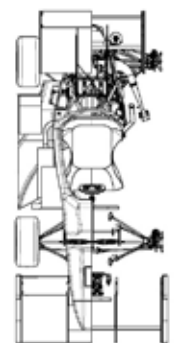
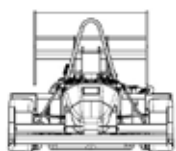
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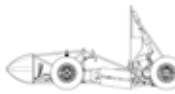
The 2016 Chippewa Racing team from Central Michigan University has produced the second Formula SAE car with a new design called the CR16. The CR16 has utilized a new chassis, drivetrain, suspension, and cooling system based on last year's performance and feedback. The team has reduced the weight of the CR16 by 50lb while maintaining the dependable reliability of last year's vehicle. The CR16 built on last year's design while increasing performance, efficiency, ergonomics, and serviceability. Our goal this year is to place in the top 50 teams in overall scoring of the competition by placing higher scores in both the static and dynamic events while completing the endurance event. Additional features include a rear sway bar, custom radiator, new exhaust system, and new steering system.

We would like to thank all of our sponsors for their support in continuing the team's legacy this year.

Fire up Chips!



BRAKE : Brembo P34 front/Brembo P24 rear, floating rotors, sintered metallic pads
BSCD : 67 mm / 42.5 mm / Inline 4 cyl / 599 cc
COOLING : Rear mounted 25.4 mm core aluminum radiator
DRIVE : Chain-driven Drexler Differential
ELECTRONICS : Motec M400 with Bosch DDU7
ENGINE : Honda CBR600RR
FR/RR TRACK : 1193.8 mm / 1168.4 mm
FRAME : Hybrid frame (monocoque, tubular space frame)
FUEL SYSTEM : Sequential fuel injection
FUEL TYPE : 93 Octane
MATERIAL : Carbon, Steel, Aluminum, Magnesium, Titanium
MPD : 10500 RPM
MPT : 9250 RPM
OLWH : 3047.2 mm long, 1397 mm wide, 1178.3 high
SUSPENSION : Double unequal length A-Arm, Push-rod actuated spring and damper
TIRE : Hoosier 10" R25B
UNIQUE : CAN bus, electro-pneumatic paddle shifting
WEIGHT : 590 lbs (267 kg)
WHEELBASE : 1651 mm



BRAKE : Hub Mounted 9in Dia, 1018 Steel Rotors, B
BSCD : 67mm/42.5mm/4 cyl/599cc
COOLING : Side Mounted Water Radiator
DRIVE : Chain
ELECTRONICS : Microsquirt v3
ENGINE : Yamaha R6
FR/RR TRACK : 66in/64in
FRAME : 1020 Tubular Space Frame
FUEL SYSTEM : Semi-Sequential Fuel Injection
FUEL TYPE : 100 octane
MATERIAL :
MPD : 10,000
MPT : 8,000
OLWH : 2745mm, 1629mm, 1282mm
SUSPENSION : Double Unequal A-arm, push rod actuated
TIRE : 20x8-13 Hoosier
UNIQUE : Ejection Seat with no parachute
WEIGHT : 690lb
WHEELBASE : 61 inches



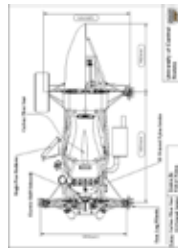
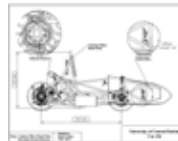
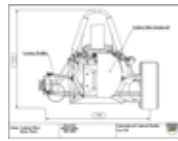


University of Central Florida Formula SAE team is proud to introduce KR16. Designed around simplicity and performance with focus on drive ability through complete redesign of all power train components and weight reduction in all sub systems.

We have additionally pursued greater effort into Electronics including new Electronic Paddle shift system and new Data Acquisition hardware.

Overall, KR16 is the strongest car designed and built by KnightsRacing and would not have been possible without the support of our sponsors and supporters for their generous contributions!

Boom.



BRAKE : Cast Iron Rotor, Tilton 77 Master Cylinder, Wilwood calipers
BSCD : 67mm, 42.5mm/4/599cc
COOLING : Single Pass Aluminum
DRIVE : Chain Driven Torsen T1
ELECTRONICS : PE3 ECU, Deutch connectors,
ENGINE : Suzuki 600 GSX-R
FR/RR TRACK : Front: 124mm Rear: 116mm
FRAME : 4130 Chromoly Steel Spaceframe
FUEL SYSTEM : Fuel Injection, Hydramat, DeatschWerks Fuel Pump
FUEL TYPE : 93
MATERIAL : Steel, Aluminum, Carbon Fibre
MPD : Over 9000
MPT : Over 9000
OLWH : 2543mm, 1399mm, 1109mm
SUSPENSION : Unequal Length Double wishbone, Penske Shocks
TIRE : Hoosier R25B 20.5 x 7.0 - 13
UNIQUE : Electronic Paddle Shift, Lasered Sintered Intake
WEIGHT : 505lb
WHEELBASE : 155mm



MACLEAN-FOGG

Congratulations to every team in this year's Formula SAE Competition.

You inspire us to continue to create ingenious solutions.

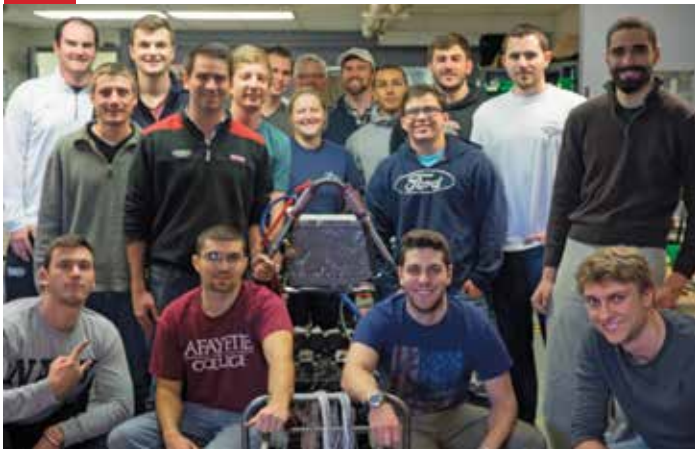
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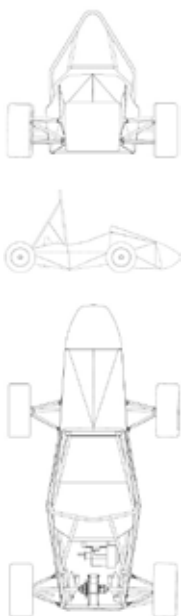
MacLean-Fogg
COMPONENT SOLUTIONS



MacLean
POWER SYSTEMS



The 2016 Lafayette Motorsports Team is designing a car to compete in the FSAE Michigan competition. Each year new members join and begin designing and manufacturing a car from scratch. While there may be similarities between each year's creations, the constant flux of new members bring about new designs and ideas; modifying concepts that did not work, maintaining professional engineering practice and creating new solutions to problems that arise. It is because of this that there is a constant evolution in the products produced each year. This year we focused on car weight, ergonomics, drivability, manufacturability, and engine performance. We believe that these five factors are what every racer is looking for in their vehicle. Highlights of this year's design include our lightest chassis ever, a highly engineered and tunable suspension, and a redesigned auto-clutch manual shifter. We would like to thank all of our supporters this year, especially Lafayette College, Mike Curcio Race Products, Dr. Scott Hummel, Serena Ashmore, Rob Layng, and the rest of the Mechanical Engineering Staff at Lafayette.

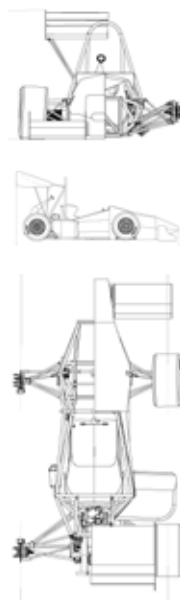


BRAKE : Hydraulic dual piston Wilwood PS-1 calipers with Cross-drilled steel rotors
BSCD : 65.5mm x 44.5mm x 4 cyl / 600cc
COOLING : Side Mounted Water Cooled
DRIVE : Chain Drive
ELECTRONICS : PE3 ECU, Custom Dash Display
ENGINE : 2003 Yamaha R6
FR/RR TRACK : Front 1295mm, Rear 1194mm
FRAME : Steel Tube Frame
FUEL SYSTEM : Electronic Injection
FUEL TYPE : 93 Octane
MATERIAL : 4130 Steel, Carbon Fiber, Aluminum, Fiberglass
MPD : 12000
MPT : 8000
OLWH : 2590 mm x 803 mm x 1219 mm
SUSPENSION : Double Unequal Carbon Fiber A-Arms, Pull Rod Actuated Coil-Over
TIRE : 18.0 x 6.0-10 Hoosier R25b
UNIQUE : Single Motion Actuated Shift and Clutch
WEIGHT : 550
WHEELBASE : 1531mm



This is the third consecutive year that West Virginia University will be competing at the Formula SAE competition in Michigan. Goals for this year's team included weight reduction, better handling, and high reliability. This year's car features the team's first aerodynamics package that includes wings. Other major changes to this year's car includes the implementation of front and rear anti-roll bars. The suspension includes carbon fiber rods to serve as push, tie, and toe rods. The car also features a frame that is approximately thirty-five pounds lighter than the previous year's.

We also would like to extend a thank you to all of our sponsors who have helped make this year's car a reality.



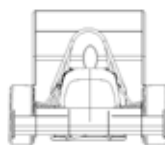
BRAKE : 4 Floating Rotor, Wilwood PS1 Caliper
BSCD : 95.0 mm/63.4 mm/1/449.3 cc
COOLING : Single Side Mount Radiator
DRIVE : Chain Drive, Drexler LSD
ELECTRONICS : Vortex Ignitions ECU
ENGINE : KTM 450 XC-W
FR/RR TRACK : 48/47 inches
FRAME : Tubular Space Frame
FUEL SYSTEM : Electronic Injection
FUEL TYPE : E85
MATERIAL : 4130 Chrome Moly
MPD : 8700
MPT : 6500
OLWH : 120, 60, 54 inches
SUSPENSION : Independent Double Wishbone Front and Rear
TIRE : 10 inch wheels 18.3 inch OD R25B Hoosier Compound
UNIQUE : Student Designed And Built Steering Rack
WEIGHT : 550 lb
WHEELBASE : 60 inches





This year, the UQTR formula SAE car will be the most advanced to ever come out of our university. Design objectives were to reduce weight, add downforce, and make the car easier to drive. A lot of fea have been made in order to reduce weight. The result is a steel space frame, 13inch wheel car of less than 450lbs including the aero package. Talking of aerodynamics, our front and rear wings should produce enough downforce to use the best of our hoosier tires. And finally in order to make the job easier for our drivers the car is fitted with your student built solenoid shifter and a slipper clutch.

The UQTR racing team is well prepared and confident to have design and manufacture a competitive car for the FSAE Michigan competition.



BRAKE : Floating disc brakes, Pull type master cylinders
Wilwood calipers
BSCD : 67mm/42.5mm/4 cylinders/599cc
COOLING : WaterCooled, Electric fan
DRIVE : 520 chain drive, Custom torsen differential
ELECTRONICS : Electronic shifter, No alternator, Paray electric ECU
ENGINE : Honda CBR600RR 2004
FR/RR TRACK : 48 in/46 in
FRAME : Chromoly 4130 tubing, TIG welded
FUEL SYSTEM : Returnless, Port injection
FUEL TYPE : 93 octane
MATERIAL : Chromoly, Aluminium, Titanium, Carbon fiber, etc.
MPD : 68.53 hp @ 11 000 rpm
MPT : 41 lb-ft @ 8 000 rpm
OLWH : 100 in/54 in/40.5 in
SUSPENSION : Double unequal length A-Arm. push rod actuated spring, Adj. Roll bar
TIRE : 20.5x7-13 R25B Hoosier
UNIQUE : Lightweight front and rear wing with fabric aircraft construction
WEIGHT : 580 lb
WHEELBASE : 60 in



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32 Univ of Maryland - College Park Terps Racing



The University of Maryland Terps Racing Formula SAE team's 2016 vehicle, TRI6, was designed with emphasis on reliability, simplicity, performance, and safety. These primary goals were achieved with a four-cylinder engine, aerodynamic effects that included front and rear wings with an undertray, and a steel space frame. Design choices for the frame structure, front suspension, steering, and seating were largely dictated by the layout of the wings and undertray diffusers. Track width and wheelbase were determined using the lap simulations and CFD modeling. Lastly, horsepower, weight, and fuel economy tradeoffs were analyzed using the lap simulations to further evaluate design decisions.



BRAKE : Ultralite 240 series front, PS1 rear
BSCD : 67mm/42.5mm/4/599cc
COOLING : Water-Cooled
DRIVE : Chain
ELECTRONICS : PE ECU3, Mars Labs Titan
ENGINE : CBR600rr
FR/RR TRACK : 48in/46in
FRAME : TIG-Welded Space Frame
FUEL SYSTEM : EFI
FUEL TYPE : 93 Octane
MATERIAL : 4130 Chromoly Steel
MPD : 12500
MPT : 10000
OLWH : 134in, 57in, 47in
SUSPENSION : Unequal length A-arms
TIRE : 10in Hoosier R25B 18in x 7.5in
UNIQUE : Custom Dry Sump System
WEIGHT : 670
WHEELBASE : 76in



33 Ferris State University Ferris Formula SAE



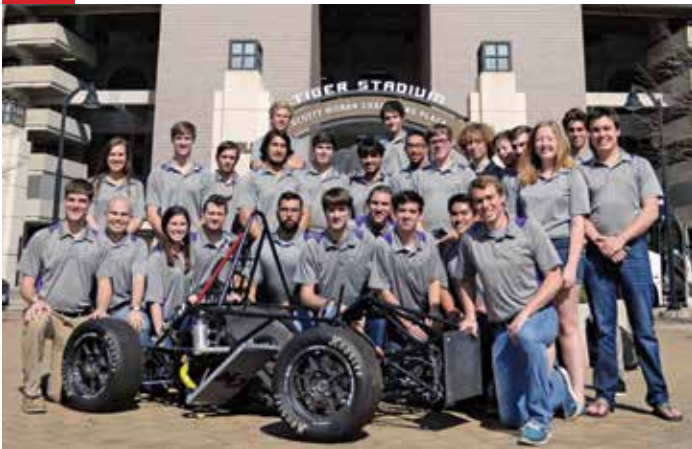
The 2016 Bulldog Racing FFR10 represents the latest evolution of the Ferris Formula SAE team's four-cylinder formula racing vehicle platform. Dynamic vehicle strain gauge testing has provided this year's team with a deeper understanding of the forces applied to the vehicle's chassis and suspension under racing conditions. On-track testing sessions have provided opportunities to improve the vehicle's tolerance and responsiveness to demanding driver inputs, and the team has capitalized on these observations to optimize the FFR10.

Bulldog Racing would like to thank its many sponsors and supporters for their generous contributions to the development of the FFR10.

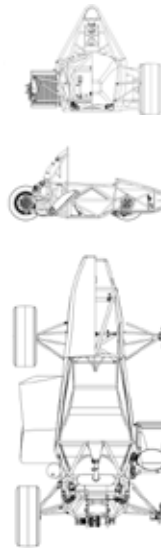


BRAKE : 4-Wheel Cast Iron Disc Brakes, Fixed Calipers with Bias Adjustment
BSCD : 42.5mm/67mm/4/599cc
COOLING : Aluminum 37-Core Radiator with Dual Electronic Cooling Fans
DRIVE : Chain-Driven Rear Axle via Clutch-Type Limited Slip Differential
ELECTRONICS : Performance Electronics PE3 ECU, Integrated Honda CBR600 Instrument Panel
ENGINE : Honda CBR600RR
FR/RR TRACK : 1143mm/45in 1143mm/45in
FRAME : 4130 Steel Space Frame
FUEL SYSTEM : Sequential Multiport Fuel Injection
FUEL TYPE : 93 Octane
MATERIAL : Winning Material
MPD : 11,500 RPM
MPT : 10,000 RPM
OLWH : 2910mm/115in, 1321mm/52in, 1156mm/46in
SUSPENSION : Double Wishbone Pushrod Suspension, Coilover Springs and Air Dampers
TIRE : 13 x 7 x 20.5 Hoosier R25B
UNIQUE : Student-Machined Suspension Components
WEIGHT : 680 lbs
WHEELBASE : 1524mm/60in





LSU TigerRacing is proud of the advancements the team has made in the past four years. This year's car "Kyra" has some minor changes from the 2015 car, most notably a shorter, lighter, and stiffer frame. Our main goals this year were to shed weight from the 2015 car's design, and to use better engineering analysis and design in each subsystem. The car retains the CBR600 F4i power plant, but most subsystems have gone through a new level of refinement above previous LSU cars.



BRAKE : Floating Water Jetted Rotors, Tilton Master Cylinders
BSCD : 67mm x 42.5/ 4 Cylinders/ 599cc
COOLING : Custom C
DRIVE : Chain, Drexler Differential
ELECTRONICS : Performance Electronics PE3 ECU, AiM EV04 Data Logging, AiM G-Dash
ENGINE : Honda CBR600 F4i
FR/RR TRACK : 1244mm/ 1193mm
FRAME : 4130 Tubular Steel Frame
FUEL SYSTEM : Sequential Fuel Injection, Return Style
FUEL TYPE : 93 Octane
MATERIAL : Chromoly 4130 Steel
MPD : 10,000 rpm
MPT : 9,000 rpm
OLWH : 2565mm/ 1444mm/ 1143mm
SUSPENSION : Double Unequal Length A-Arms, Front Pullrod, Rear Pushrod, Öhlin Dampers
TIRE : Hoosier 20.5x13 R25B
UNIQUE : One Red Chassis Tube for Baton Rouge ("Red Stick")
WEIGHT : 620 lbs
WHEELBASE : 1600mm



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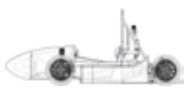
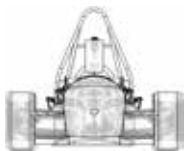
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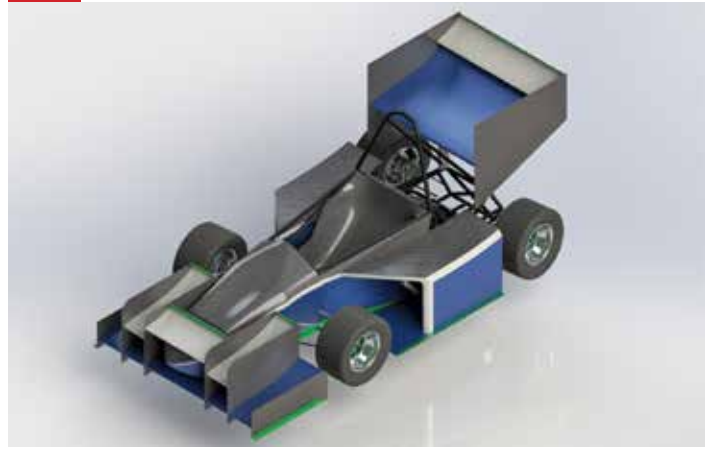
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The first appearance of Unimet Motorsports in FSAE Michigan was in 2004. Afterwards only 3 cars were made, the last one in 2015. Our model 2016 materializes the hard work done for this group of students since 2013, our goal is to set a background so future generations have the chance to make improvements and do a better job from our experience, in order to guarantee the continuity in competing in Formula SAE. Therefore, for this year we are looking to complete all static and dynamic events. With reliability in mind, the 2016 prototype is a frame body design, developed and constructed in our facilities with a 600 cc Kawasaki engine, 13 inch Hoosier tires and a series of components made by ourselves. We would like to thank to our sponsors for helping us to achieve this project, without them it couldn't be possible. Also to our parents, our faculty advisor Carlos Andrade and the Universidad Metropolitana for their patience and opportune assistance.

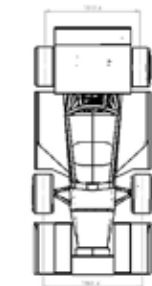
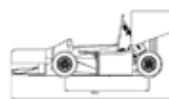


BRAKE : Gray cast iron rotors. Wilwood Calipers and Master Cylinders
BSCD : 66mm/43.8mm/4 Cylinder 599cc
COOLING : Single mounted Radiator, with Electric fan
DRIVE : Chain Drive TRE Differential
ELECTRONICS : Haltech Elite 1500 ECU
ENGINE : Kawasaki ZX6RR
FR/RR TRACK : FR:1320mm/52" RR:1270mm/50"
FRAME : 4130 Chromoly Steel Tube
FUEL SYSTEM : Bosch Internal Fuel Pump And Custom Aluminum Tank
FUEL TYPE : 93 Octane
MATERIAL : Chromoly, Aluminum, Fiberglass
MPD : 86 Kw at 13000 RPM
MPT : 65 Kw at 13 RPM
OLWH : 185x147x120 mm
SUSPENSION : Double A-arms. Push rod with Fox van RC dampers
TIRE : 20.5x7-13 R25B Hoosier
UNIQUE :
WEIGHT : 610 lb
WHEELBASE : 1700mm/67"



After completing all events in competition for the first time in eight years, Penn State Racing is back to improve upon last year's results with a few upgrades. The 2016 car will feature a brand new pneumatic shifting system, allowing for faster lap times. The team has implemented an enhanced aerodynamics package that is lighter and will create more downforce. Following persistent testing at the track, the team has refined its' suspension tuning, enhancing driver control. Penn State Racing takes pride in being able to say that we build 90% of the car at Penn State and is motivated through the dedication and hard work of its' members and success at competition.

We would like to thank our sponsors for the continued support of Penn State Racing.

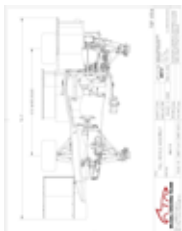
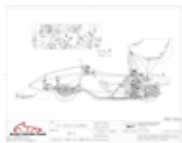


BRAKE : Floating, Durabar G2 Cast Iron, Hub mounted, 177.8 mm OD
BSCD : 67 mm bore, 42.5 mm stroke, 4 cylinders, 599 cc
COOLING : Single sidepod mounted 1 L capacity, 2400 cfm fan mounted to core
DRIVE : 520 chain
ELECTRONICS : Motec CDL3 Dash and PE3 ECU
ENGINE : 2015 Yamaha R6r
FR/RR TRACK : 1183.6 mm, 1117.6 mm
FRAME : Front and rear CNC profiled space frame
FUEL SYSTEM : Sequential fuel injection, 4 Denso injectors, Walbro external fuel pump
FUEL TYPE : 100 octane gasoline
MATERIAL : Carbon fiber 11.6 oz/yd, 4130 steel, 6061 Al, 7075 Al, Ti 6 Al - 4V
MPD : 13,500 rpm
MPT : 10,000 rpm
OLWH : 2995 mm long, 1471 mm wide, 1210 high
SUSPENSION : Double, unequal length, non-parallel A-arm. Pullrod actuated coil spring
TIRE : 18x7.5-10 R25B Hoosier Bias-Ply
UNIQUE : Pneumatic shifting system, CNCed components
WEIGHT : 600 lb
WHEELBASE : 1524 mm





The MRT17 combustion prototype will mark the McGill Racing Team's 17th entry into the FSAE series. The vehicle targets were based on a point mass lap time simulation that allowed the team to assess the effect of vehicle parameters on competition performance. As a result, the MRT17 features a CFRP monocoque and full aerodynamics package (front, mid, and rear wings), and an E85-powered naturally aspirated Rotax DS450 single cylinder engine. Alongside vehicle development, the McGill Racing Team focused on the project goals of efficient deadline management and increased traceability, allowing for a smooth season and efficient transition for further years.



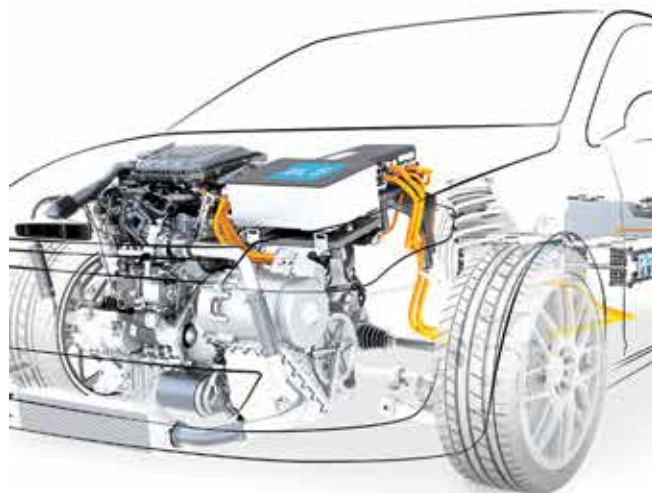
BRAKE : Steel Discs, 4/2-Piston Calipers F/R
BSCD : 97/60.8/1/449.3cc
COOLING : Side-mounted Twin Water-to-Air Heat Exchangers
DRIVE : 4-Speed Internal Gearbox w/ Primary Reduction, 520 Chain Final Drive
ELECTRONICS : MoTec M150 ECU/C185 Data Logger, Custom Power Monitoring PCB
ENGINE : BRP-Rotax GmbH, Type 449
FR/RR TRACK : 1117.6/1117.6 mm (44/44 in)
FRAME : CFRP Full Monocoque
FUEL SYSTEM : Port Injection, Manifold Pressure Regulated
FUEL TYPE : E-85
MATERIAL : CFRP, Aluminum, Steel, Titanium, Super-Alloys, Plastics
MPD : 9000
MPT : 8000
OLWH : 2918/1328/1181 mm (114.9/52.3/46.5 in)
SUSPENSION : Double unequal length A-Arm, Pull/Push-rod F/R actuated dampers
TIRE : 18x6-10, LCO Hoosier
UNIQUE : Integrated Side-Wing Aerodynamics
WEIGHT : 480
WHEELBASE : 1549.4 mm (61 in)



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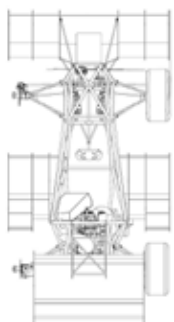
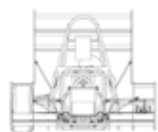
Rose Hulman Inst of Tech

Rose-Hulman Grand Prix Engineering



This year represents a significant change in Rose GPE's design. New to this year's car is aerodynamics, a single cylinder engine, a completely revised frame, electronic throttle and electronic shifting. Many of these are the results of several years of work that have come together on this radical new design.

We would like to thank all our sponsors who have made this year possible as we could not do it without you.



BRAKE : Tilton Type 77
BSCD : 0.625/0.875 in
COOLING : Custom, computer controlled fan and pump
DRIVE : Chain, Drexler differential
ELECTRONICS : Performance Electronics 3
ENGINE : YFZ450R
FR/RR TRACK : 1219/1193 mm
FRAME : 4130
FUEL SYSTEM : Custom rail, stock injector
FUEL TYPE : 100
MATERIAL : 4130/Al/CFRP
MPD : 3.725 (hp boiler) @ 9500
MPT : 4.15 (kgf-m) @ 7500
OLWH : 2755x1422x1199 mm
SUSPENSION : Double wishbone, pullrod front, pushrod rear
TIRE : 6.0/18.0-10 LCO
UNIQUE : Size 02 packaging, ETC
WEIGHT : 37.5 stone
WHEELBASE : 1524



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York College of Pa

YC Racing



The York College Racing Team is celebrating our 10th anniversary of FSAE competition. With new to York College designs and changes, we plan to go toe-to-toe with perennial front runners. One feature that will elevate our level of competition is a new 2-cylinder fuel injected engine. More features include new carbon fiber suspension members, custom rod ends, and our redesigned data acquisition system equipped with wireless data transmission. These features will propel us toward the top of the competition.

What makes York College of Pennsylvania different? Unlike many teams, our team is composed only of senior engineering students, none of which have competed in an FSAE competition before. Our team had eleven weeks to design every component of the car, and another ten weeks to fabricate and assemble these components. All of this tangible progress has been accomplished during a normal engineering workload.

Our team would also like to send special thanks and our sincerest gratitude's to our professors Dr. Scott Kiefer and Dr. Tristan Ericson. Without the high level of commitment from these two, our racing team would not be in the position we are today. Thank You

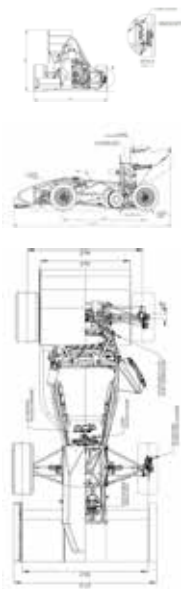


BRAKE : Wilwood Calipers, Wilwood Dynalite brake pads
BSCD : 76/49.58/2/450cc
COOLING : Side mounted singlecore Yamaha radiator
DRIVE : Chain is 520, sequential gearbox internal to engine
ELECTRONICS : Performance Electronics PE3 ECU
ENGINE : Aprilia SXV/RXV 450
FR/RR TRACK : 1219.2/1219.2
FRAME : Steel Spaceframe
FUEL SYSTEM : Fuel Injection
FUEL TYPE : 93
MATERIAL : 4130 Normalized
MPD : 9000
MPT : 11000
OLWH : 2858.96/1381.15/1141.77
SUSPENSION : Unequal double A arm
TIRE : 18 X 6-10 R25B Hoosier
UNIQUE : Adjustable Pedal Box, Open diff, Custom rear sprocket
WEIGHT : 233.1
WHEELBASE : 1574.8





The University of Pittsburgh's PR-028 racecar was designed to be a competitive and reliable Formula SAE car in all events. To achieve this, each sub-team used various analysis methods to make decisions centered on improving performance, manufacturability, serviceability, and cost. Our design process produced a vehicle with the following main features: a steel tube chassis, 13" wheels, a Honda CBR600rr engine, a five speed transmission, paddle activated electro-pneumatic shifting, a manually actuated clutch behind the steering wheel, a complete MoTeC Electronics suite, and front and rear aerodynamics packages.



BRAKE : Slotted 4142 Floating Rotors,
BSCD : 67/42.5/4/599
COOLING : Left side mounted cross-flow dual pass radiator, 844 cfm fan
DRIVE : Chain driven, 428 chain
ELECTRONICS : MoTeC m400 ECU, PDM 32, SDL3 datalogging
ENGINE : Honda CBR600RR
FR/RR TRACK : 1280mm/50.3in F, 1177mm/46.3in R
FRAME : Steel tube space frame
FUEL SYSTEM : Stock Honda CBR600rr, Sequential-Fire, Port Electronic Fuel Injection
FUEL TYPE : 93
MATERIAL : 4130, CFRP, Al, Ti, Plastics
MPD : 10500
MPT : 8500
OLWH : 2982mm/117.4in, 1458mm/57.1in, 1195mm/47in
SUSPENSION : Fully independent SLA, pull (F) push (R)-rod actuated coil over dampers
TIRE : 20.5X7.0, R25B, Hoosier F/20X7.5, R25B, Hoosier R
UNIQUE : 4130 cast "supernode"
WEIGHT : 620lb/281kg
WHEELBASE : 1549.4mm/61in



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California Polytechnic State Univ-SLO

Cal Poly Racing

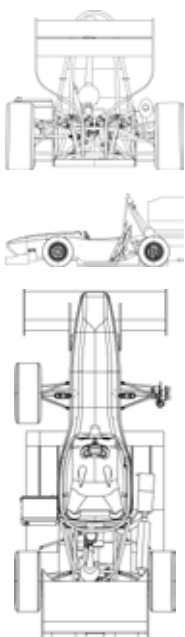


Cal Poly Racing is proud to present our 2016 competition racecar.

The hybrid-monocoque chassis is built around a Yamaha YFZ-450R engine. Power is transferred to the wheels via chain drive, through a Drexler limited slip differential. Billet aluminum uprights connect the 13" wheels to a double A-arm suspension setup. Pushrod actuation in the rear and pullrod actuation keeps the car balanced and tunable. Improved aerodynamics keep the car planted to the ground. A MoTeC advanced data acquisition system has allowed the team to push the car to its limits, while a professional grade electronics system has improved vehicle reliability. Stopping the car are four outboard Brembo brake gripping custom ductile-iron rotors.

This vehicle represents the hard work of a multidisciplinary team consisting of Mechanical, Aerospace, Electrical and Computer Engineers.

We would like to thank our sponsors, especially TenCate, Next Intent, SpaceX, Butonwillow Raceway, C&D Zodiac, BMRS, Airtech International, Graves Motorsports, Yamaha, and the Cal Poly Mechanical Engineering Department. Without them this vehicle would not have made it off paper.



BRAKE : Dual Tilton MC, 4x Brembo caliper, floating ductile iron rotors
BSCD : 95mm/63.4mm/1cyl/449cc
COOLING : Single side mounted radiator
DRIVE : Chain, Drexler LSD
ELECTRONICS : MoTeC M400, MoTeC ACL, custom CAN input modules and power distribution module
ENGINE : Yamaha YFZ450R
FR/RR TRACK : 1194mm / 47" Front, 1168mm / 46" Rear
FRAME : Hybrid frame, carbon-fiber driver
FUEL SYSTEM : Russell lines, fittings, regulator; single port fuel injection
FUEL TYPE : 100 Octane
MATERIAL : Carbon-fiber prepreg, Aluminum honeycomb, 4130 steel
MPD : 10000 RPM
MPT : 6500 RPM
OLWH : 3035mm/120" L, 1380mm/54" W, 1233mm/49" H
SUSPENSION : Unequal-length A-arm, pullrod front/pushrod rear, billet aluminum upright
TIRE : 13" Hoosier R25B
UNIQUE : Front/rear wings, diffuser, custom dashboard display
WEIGHT : 250kg / 550lb
WHEELBASE : 1575mm/62"



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Clemson Univ

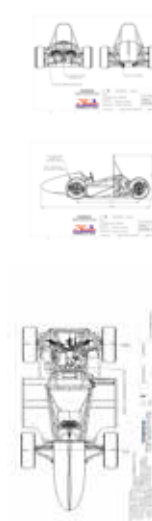
Clemson Formula SAE



Tiger18 represents an evolution of Tiger17 from last season. Components have been optimized in their functionality and performance. Emphasis has been placed on data acquisition and analysis to fortify engineering decisions. A new 3D printed carbon fiber intake with unequal runner lengths was designed by correlating engine dyno data with a Ricardo WAVE simulation and strain gauges were placed on suspension members to determine the optimum thickness for A-arm tubes.

The biggest addition this year is CUFSAE's first downforce device: a diffuser. It is the product of the second year in a three year aero package development plan. The first year was concerned with manufacturing of composite parts and basic aerodynamic knowledge building. The diffuser represents culmination of months of research and design, several hundred hours of CFD.

With these improvements, Clemson hopes that Tiger18 will help the team reach a top 20 finish.

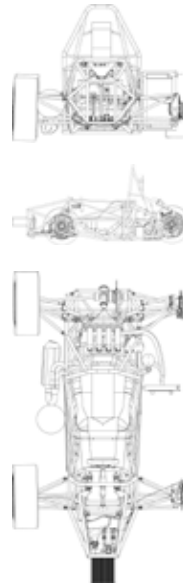


BRAKE : AP Racing calipers, Tilton master cylinders, floating T-410 SS rotors
BSCD : 67mm x 42.5mm / 4 cylinders / 599cc
COOLING : Single side mounted radiator with thermo-static controlled electric fans
DRIVE : Chain, 520, Quaife/Taylor Race Torsen ATB, 4:1 torque bias
ELECTRONICS : Custom Arduino Dash, Motec M150 ECU
ENGINE : CBR600RR
FR/RR TRACK : 48 in / 46 in
FRAME : 4130 Chromoly Steel Tube
FUEL SYSTEM : Honda Stock PGM-FI
FUEL TYPE : 93 octane
MATERIAL : Custom carbon fiber nosecone, sidepods, and body panels
MPD : 10500
MPT : 7700
OLWH : 106.7in x 56in x 42.7in
SUSPENSION : Double unequal length A-Arm. Pull rod actuated spring/damper. Adjustable/re
TIRE : 20.5 X 7.0 - 13 R25B Hoosier
UNIQUE :
WEIGHT : 575
WHEELBASE : 61.5 in





The Q16 vehicle represents the culmination of 4 years of continuous improvements in vehicle dynamics, powertrain and driver ergonomics. With the development of an entirely new vehicle dynamics package in 2015, this year's model includes the addition of anti-roll bars. Exhaust and intake systems were redesigned to improve engine efficiency and a better integration with surrounding vehicle systems. Changes were made to improve cooling system performance using data collected on the 2015 vehicle. The frame design and control placements were modified to improve driver comfort, without increasing overall vehicle weight. Further systems, including aerodynamics, steering and electrical were updated to reflect issues faced with the 2015 vehicle, primarily ease of assembly, troubleshooting, and durability. The resulting Q16 vehicle will showcase increased reliability, performance and refinement over the outgoing model. The improvements in vehicle dynamics and powertrain will significantly increase the competitiveness of the vehicle, while the careful consideration of assembly methods and serviceability ensure any trackside adjustments can be completed quickly and easily.



BRAKE : Floating Rotors, Tilton Masters, AP Racing Calipers
BSCD : 67/42.4/4/599
COOLING : Single Side Mounted Radiator w/ Fan
DRIVE : Chain Drive, KAAZ LSD
ELECTRONICS : PE3, DL1, DASH4
ENGINE : Honda CBR 600 F4i
FR/RR TRACK : 1250/1225
FRAME : Chromoly Space Frame
FUEL SYSTEM : Sequential Fuel Injection
FUEL TYPE : 93 Octane
MATERIAL : Steel, Aluminum, Carbon Fiber
MPD : 12500
MPT : 10500
OLWH : 2920, 1425, 1180
SUSPENSION : Double Unequal Length Carbon A-Arms, Pull Rod Front, Push Rod Rear
TIRE : 20.0x7.0-13 R25B
UNIQUE :
WEIGHT : 260
WHEELBASE : 1550



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Rensselaer Polytechnic Inst

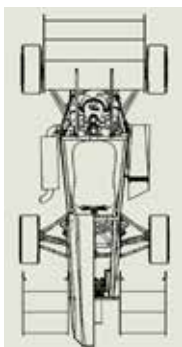
Rensselaer Motorsport



This year, Rensselaer Motorsport has constructed its 21st car, RM21. This marks the first space frame developed by the team in a decade, shifting away from the old hybrid hexcel monocoque design. RM21 is the first car produced with a unified aesthetic, creating a distinctive look paying homage to our past designs, while looking to the future.

Our suspension consists of custom CNC-machined uprights and hubs, connected to the car with hand-fabricated 4130 steel tubular a-arms. Braking is handled with Wilwood GP200's in the front and PS1's in the rear, with a pedalbox with remote adjustable bias. RM21 is powered by a modified Honda CBR600F4i motorcycle engine.

The engine breathes through a rapid-prototyped SLS intake and custom stainless steel headers. The engine package was completed by dyno tuning for maximum drivability, predictable power delivery, and reliability. Power is delivered to the ground through a custom housing, clutch-type limited-slip differential. Pneumatic shifting and a custom HUD give us highly effective driver interaction with the car. RM21 also features a full aero kit, utilizing front and rear wings and a cooling side-pod.



BRAKE : Wilwood GP200/PS1 Front/Rear
BSCD : 67mm/42.5mm/4cylinder/599cc
COOLING : 12.5x7.6" radiator, 1400CFM
DRIVE : 520 X Ring Chain
ELECTRONICS : PE3 ECU, Aim Evo4 DAQ, Custom Shifting System
ENGINE : Honda CBR 600 F4i
FR/RR TRACK : FR: 1230mm/48.4in, RR: 1200mm/47.2in
FRAME : 4130 Chromoly Steel Space Frame
FUEL SYSTEM : Custom fuel injection system controlled by PE3 ECU
FUEL TYPE : 93 Octane
MATERIAL : 4130 Chromoly Steel
MPD : 11200rpm
MPT : 8000rpm
OLWH : 3200mm/126.0in / 1401mm/55.2in / 1180mm/46.5in
SUSPENSION : Unequal Length Double Wishbone, Front/Rear Pullrods
TIRE : Hoosier 18.0x6.0-10 LC0
UNIQUE : Custom diff housing, carbon/kevlar body kit, custom SLS intake
WEIGHT : 580lb/263kg
WHEELBASE : 1640mm/64.6in



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Ohio State Univ

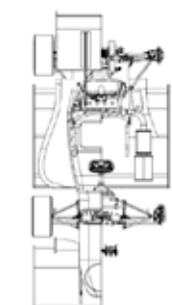
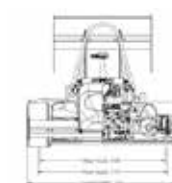
Formula Buckeyes



The Formula Buckeyes are proud to present our 2016 vehicle: FB16.

The FB16 was designed with performance, reliability, and serviceability in mind. The dual cell carbon fiber monocoque can be split in under eight minutes and joined in 22. The suspension system is designed around 10" Avon Tires, which are mounted on custom 3-piece CFRP and aluminum wheels. The powertrain consists of a Honda CBR 600 F4i motor running to the wheels through a Drexler LSD. Custom brake calipers are implemented at the rear to improve system stiffness and tuning potential. For 2016, the aerodynamics package employs all new undertrays, sidepods, and wings.

The Formula Buckeyes would like to thank all of our sponsors for making 2016 a success!



BRAKE : Floating Rotor, Custom Rear Calipers
BSCD : 67mm/42.5mm/4cyl/599cc
COOLING : Sidepod Mounted Single Pass Aluminium Radiator, Adjustable 500 CFM Max Fan
DRIVE : 520 x-link Chain
ELECTRONICS : MoTeC c185 Dash, Wireless Telemetry
ENGINE : Honda CBR 600 F4i
FR/RR TRACK : 1170mm/1130mm
FRAME : Dual Cell Monocoque
FUEL SYSTEM : EFI
FUEL TYPE : E-85R
MATERIAL : CFRP, Rohacell and Aluminum Honeycomb
MPD : 11000
MPT : 9000
OLWH : 2947mm/1325mm/1191mm
SUSPENSION : SLA, Pushrod to Rocker, Coil Spring, Droplink to ARB
TIRE : 10" Avon A92
UNIQUE : 3-piece CFRP Wheel, Dry Sump System, Driver Adjustable Brake Bias
WEIGHT : 580 lbs
WHEELBASE : 1600 mm

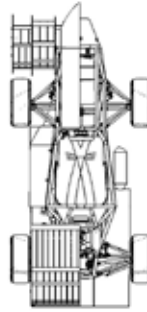
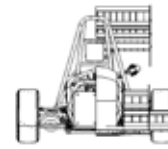




The EMS16R is an ambitiously re-imagined EMS15R. Focusing on all aspects of design pushing towards an improvement in not only the faults in 2015 but also the best aspects of it. The evolution of Suspension, Brakes, and Aerodynamics will lead to more stability and handling. While the Drivetrain, Frame, and Driver Controls have focused on innovative packaging and weight reduction.

The most significant changes to this year's suspension is an anti-roll bar and an aero dynamic system that have been incorporated into the vehicle to improve the stability in high speed cornering. The brakes have moved from fixed stainless steel rotors to floating mild steel rotors with aluminum bases. Driver controls and frame have optimized the amount of space needed for the driver making the vehicle's CG lower and frontal surface area less. Drivetrain has been improved by reducing the weight of rotational mass by 5 pounds and packaging all of the components, including the engine, into a mount that is easily dropped out the bottom of the vehicle.

Eagle Motorsports is ready for the upcoming year with big expectation in our new design.



BRAKE : AP Racing Calipers, Mild Steel Floating Rotors
BSCD : 98mm / 72mm /Single Cylinder / 532cc
COOLING : Kawasaki Ninja 250 radiator
DRIVE : Chain Driven Spool
ELECTRONICS : PE3 ECU
ENGINE : 2009 KTM 525
FR/RR TRACK : 1168.4mm / 1168.4mm
FRAME : Space frame
FUEL SYSTEM : Fuel Injection
FUEL TYPE : 93 Octane
MATERIAL : 1018 Mild Steel, .049/.065/.095 x1in round/square tube
MPD : 9500
MPT : 7400
OLWH : 2964.18mm, 1346.2mm, 1200mm
SUSPENSION : Double Wishbone Pull Rod Actuated
TIRE : 6.0x18.0-10LC0 Hoosier
UNIQUE : Anti-roll bar, Aero Package, Phone Dash
WEIGHT : 550lb
WHEELBASE : 1524mm



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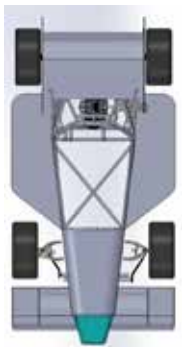
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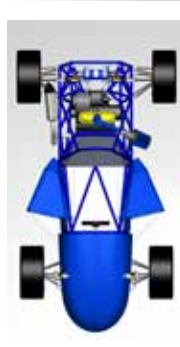
This is TTU Motorsports' third year at the FSAE Michigan competition. TTU Motorsports takes pride in that the 2016 Talon T is entirely built, machined, fabricated, and powder coated in house. This is the team's first steel space frame and is constructed out of 1020 DOM steel for various reasons. The 2016 Talon T is stacked with a 626cc Briggs and Stratton Vanguard V-Twin that is a heavily modified racing version of the industrial engine platform de-stroked to 602 cc. The suspension has been optimized by a combination of several software tools to ensure the vehicle maintains maximum traction throughout corners. TTU Motorsports continues to use a short over long arm configuration in the front with a live solid axle in the rear. The aerodynamics team has been running CFD simulations for months in the attempt to get as much downforce out of the vehicle as possible. The aerodynamics package consists of a 3-element rear wing, floorboard, front wings, and splitter/skirt.



BRAKE : Wilwood Calipers with 10in X .25in Drilled Rotors
BSCD : 76.2/66.04/2/609cc
COOLING : Air Cooled
DRIVE : CVT
ELECTRONICS : Aim MyChron 4
ENGINE : Briggs Stratton Vanguard V-Twin
FR/RR TRACK : 48in/46in
FRAME : Steel Space Frame
FUEL SYSTEM : Conventional
FUEL TYPE : 100 OCTANE
MATERIAL : 1020 DOM
MPD : 7800
MPT : 5800
OLWH : 115in/57in/46in
SUSPENSION : Short Over Long Arm, Solid Live Axle
TIRE : 20.0x8.0-13s M28
UNIQUE : Active Anti-Roll Bars
WEIGHT : 600lb
WHEELBASE : 68in



Thunderwolf Racing 08 has come together as a group of six students to design an FSAE car for 2016. We are using a 2007 Honda CBR 600 RRA engine that Lakehead has run for a number of years. A custom 3-D printed intake has been designed and printed using a glass filled nylon material to withstand the pressure and temperature demands. AISI 1020 steel tubing has been utilized to create the space frame where torsional rigidity and weight were chief concerns. The suspension was designed using upper and lower "A" arms with Ohlin's dampers and adjustable ride height capabilities incorporated. Sway bars on the front and rear suspension were designed to improve driving dynamics and performance. Pneumatic shifting with a 3-pedal set up, and magnesium rims wrapped in Hoosier rubber. The body panels on the 50 car were designed on Solidworks and made using a female mold and wet layup of Carbon Fibre and Epoxy. We custom fabricated the aluminum driver's cell enclosure and seat designed around our drivers.

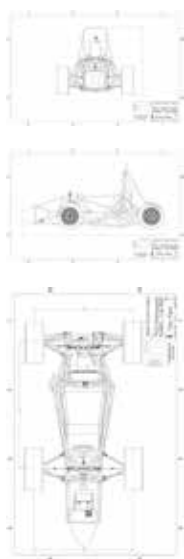


BRAKE : Independent Front
BSCD : 67mm x 42.5mm x 4 cyl x 599 cc
COOLING : Liquid cooled
DRIVE : RWD
ELECTRONICS : IQ3 Racepack Logger with Haltech PS1000 Engine Management System
ENGINE : Honda CBR 600 RRA
FR/RR TRACK : 1427mm x 1460mm
FRAME : Steel Space Frame
FUEL SYSTEM : Dual Stage Fuel Injection
FUEL TYPE : 93 Octane
MATERIAL :
MPD : 82hp @ 13500 rpm
MPT : 49 lbft @ 11250rpm
OLWH : 2527mm, 1460mm, 1126mm
SUSPENSION : Unequal Length A-Arms Front and Rear Pull Rod with Actuated Dampers
TIRE : 20x7-13 R265B Hoosier, 203mm wide, 3 pc AL Rim, 20mm neg
UNIQUE : 3D printed glass filled nylon intake
WEIGHT : 273kg
WHEELBASE : 1699.2mm





This year's design objective was to build a simple yet reliable car that anyone can drive regardless of previous driving experience. The car will run on a Honda CBR600 F4i mounted to a steel tubular chassis. This car was built on a tight budget such that the car would be affordable for as many of those who are interested in acquiring one.



BRAKE : 4 Wheel Disk Brakes, Wilwood PS1 Caliper, 9" Rotor

BSCD : 42.5mm / 67mm / 4 cylinders / 599 cc

COOLING : Water Cooled

DRIVE : Chain Drive

ELECTRONICS : Integrated Power Control Module, PE3 ECU

ENGINE : Honda CBR600 F4i

FR/RR TRACK : 48 in / 46.5 in

FRAME : Steel Spaceframe

FUEL SYSTEM : Fuel-Injected

FUEL TYPE : 93 Octane

MATERIAL : 4130 Frame

MPD : 10200

MPT : 12500

OLWH : 109, 56, 51 (in)

SUSPENSION : Double Wishbone, Pushrod

TIRE : 13" Hoosier R25B

UNIQUE :

WEIGHT : 650 lbs

WHEELBASE : 62 in



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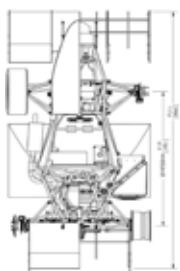
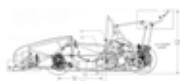
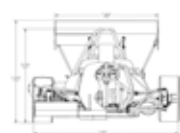
The University of Minnesota proudly presents the Go-4 2016. This year's iteration incorporates many weight saving measures, including frame redesigns and minimization of materials in all components. An aerodynamics package was developed over the last nine months which should give Gopher Motorsports an edge with increased downforce and faster lap times.

Gopher Motorsports would like to thank the University of Minnesota and all of our industry sponsors for their continued support. Without them, none of this would be possible.

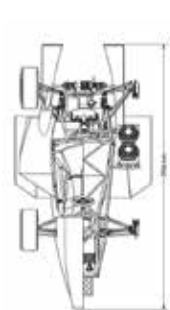


Our focus for 2016 is to improve upon our designs from previous years by analyzing the failures and successes of past vehicles. We designed a more reliable and drivable while adding additional data processing capabilities, to improve our tuning ability and allow our vehicle to serve as a test-bed for future years. We also designed the vehicle with the goal of promoting design for manufacture and assembly, reducing time spend in the shop and giving us more time to tune and train in the car. The team additionally continued to work towards its goal of enabling amateur drivers take full advantage of the car's potential. Throughout the year, the team used computer simulations, subsystem testing, and full-scale data logging to study and improve vehicle performance.

This will be our 20th consecutive year in existence and the 30th since the establishment of Formula SAE Michigan and our team.



BRAKE : Outboard rotors, Wilwood calipers
BSCD : 65.5mm/44.5mm/4/600cc
COOLING : Sidepod mounted single core radiator w/fan
DRIVE : Modified transmission, chain drive, TRE differential
ELECTRONICS : MoTec EDL and M600 ECU. Student designed CAN bus.
ENGINE : Yamaha 2003-2005 YZF R6
FR/RR TRACK : 1504/1504 [mm] 55.4/55.4 [in]
FRAME : Steel space frame with bonded shear panels
FUEL SYSTEM : Custom fuel rail, returnless system, dual cone injectors
FUEL TYPE : 93 Octane
MATERIAL : 4130 steel, nomex shear panel, carbon fiber.
MPD : 11700 RPM
MPT : 9800 RPM
OLWH : 3080/1420/1185 [mm] 121.3/55.9/46.7 [in]
SUSPENSION : Unequal length, non-parallel a-arms. Pull front, Push rear.
TIRE : Hoosier 20.5x7-13 R25B
UNIQUE : Student designed carbon fiber rims
WEIGHT : 590lbs
WHEELBASE : 1561mm/46.7in

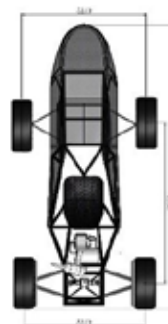


BRAKE : Custom Rotors, AP Racing MC, Willwood Calipers
BSCD : 67 mm / 42.5 mm / 4 cylinder / 599 cc
COOLING : Water Cooled, Single Radiator, Double Fan
DRIVE : Chain Drive, Drexler LSD
ELECTRONICS : DTA Fast S80 ECU, Custom Shifting, AIM Datalogger
ENGINE : Honda CBR 600 RR
FR/RR TRACK : 1207 mm / 1204 mm
FRAME : Spaceframe
FUEL SYSTEM : Sequential Multi-point Fuel Injection
FUEL TYPE : 100 Octane Gasoline
MATERIAL : Carbotanium
MPD : 80 hp (9500 rpm)
MPT : 47 ft-lbs (8500 rpm)
OLWH : 2810 mm, 1524 mm, 1142 mm
SUSPENSION : Unequal length A-arm, Push rod actuated
TIRE : 18.0 / R25B Hoosier
UNIQUE :
WEIGHT : 600 lbs
WHEELBASE : 1584 mm





The sixth generation of OKState Racing's Formula SAE racer makes use of space-frame Chromoly tubing that has been modified and adjusted from the previous model. Not only does this version fit the driver more comfortable with a new seat design, it also displays a suspension cover to reduce any drag caused by our front shocks. Our goal this year was to mend any problems we encountered with the previous design and make minor changes to improve performance and stability.



BRAKE : Front/Rear w/ metering valve Wilwood
BSCD : 95/63.4/1/449cc
COOLING : Constant flow ECU controlled cooling fan
DRIVE : Quaife-LSD Taylor Race Diff.
ELECTRONICS : PE3
ENGINE : YFZ-450 R
FR/RR TRACK : 48 in 48 in
FRAME : 4130 Chromoly
FUEL SYSTEM : Fuel Injection
FUEL TYPE : 93 Octane
MATERIAL : All Sorts
MPD : 45 HP at 90x100 RPM
MPT : 35 Torque at 50x100 RPM
OLWH : 101 in 52 in 46 in
SUSPENSION : Unequal length A-Arms, Push rod Actuated
TIRE : R25B
UNIQUE : Carbon Fiber Suspension Cover
WEIGHT : 500 lb
WHEELBASE : 62 in



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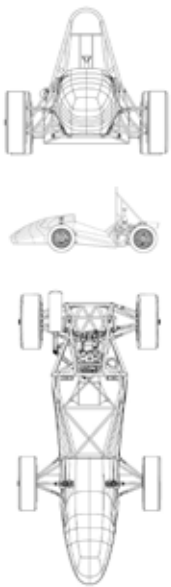
The 2016 Blue Devil Motorsports team focused on driver ergonomics and overall vehicle control. Minimal changes were made to the chassis and suspension design from 2015. The steering rack and column, intake, and pedal box were redesigned to increase performance and driver ergonomics. The powertrain and drivetrain systems also received upgraded components to increase performance, tunability, and data logging capabilities. The 2016 team also carried over the removable cradle design for the Aprilia SXV 450 engine. Design modifications for the 2016 car ensured the overall vehicle weight would not increase.

Blue Devil Motorsports would like to thank all of the sponsors for their support as well as the faculty and staff associated with the team.

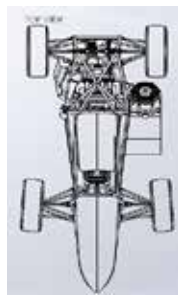
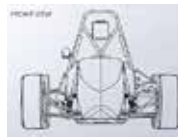


Huskie Formula Racing has developed this year's car to perform. The design focuses on bringing speed and reliability to an attractive user friendly design. Featuring a high output 4 cylinder engine mated to an ultralight spaceframe the car is capable of pulling massive g's and properly setup can dominate the racetrack.

To help leave the competition far behind carbon fiber has been used extensively on the car. Even portions of the powertrain have had the composite treatment. With a solid car and a solid team Huskie Formula Racing hopes to do well at Detroit this year. A special thanks goes to all of our sponsors without whom we could not hope to compete.



BRAKE : 4 wheel disc, cast iron rotors, adjustable brake balance
BSCD : 76mm / 49.5mm / 2-cyl / 449cc
COOLING : Dual cradle mounted aluminum radiators with manual fans
DRIVE : Chain drive with Drexler limited slip differential
ELECTRONICS : MoTeC M800, Analog/Digital display, Li EVO 2
ENGINE : Aprilia V-twin
FR/RR TRACK : 44in / 43in
FRAME : Steel space frame
FUEL SYSTEM : Electronic fuel injection
FUEL TYPE : 93 Octane
MATERIAL : 4130 chromoly steel tube, 6061 aluminium, carbon fiber
MPD : 11000
MPT : 8800
OLWH : 97in / 53in / 47in
SUSPENSION : Unequal length a-arm, push rod actuation
TIRE : 13in Hoosier R25B
UNIQUE : Quick-change removable powertrain cradle, flux capacitor
WEIGHT : 550lb
WHEELBASE : 62in



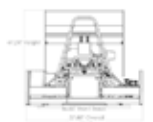
BRAKE : 4 wheel disc, single piston calipers
BSCD : 67mm/42.5mm/4/599cc
COOLING : Sidepod liquid cooling
DRIVE : Chain with torsen lim. slip
ELECTRONICS :
ENGINE : Honda 4 cylinder
FR/RR TRACK : FR:1295mm RR:1181mm
FRAME : Space Frame
FUEL SYSTEM : Single Stage Sequential Injection
FUEL TYPE : 93 Octane
MATERIAL : 4130 Steel and Carbon Fibre
MPD :
MPT : 9000
OLWH : 2692mm long, 1530mm wide, 1143mm high
SUSPENSION : Fully Independent Front Pullrod Rear Pushrod Ohlins MKII Dampers
TIRE : Hoosier 20.5x7 - 12 R25B
UNIQUE : Ice Racing Kit Available
WEIGHT :
WHEELBASE : 1549mm





NR16 uses the reliable, easy to drive Yamaha Genesis 80FI powerplant with a CVT. The packaging of the CVT was redesigned to allow for a more rearward center of gravity to improve handling. An aerodynamic package was introduced this year to improve cornering performance. To offset the added weight of the aerodynamics package significant weight-savings measures were taken, specifically in the suspension. The design emphasizes adjustability for the user with adjustable pedals and suspension points. A steel spaceframe is used for ease of adjustment and access to key components. A renewed focus on ergonomics allows the driver to comfortably control the car during long events.

Our team is comprised of Senior Mechanical, Systems, and Aerodynamic Engineers. After graduation, we will commission as Officers into the US Navy and Marine Corps.



BRAKE : Tilton 77 Master Cylinders. AP racing 2 piston front 1 piston rear calipers.

BSCD : 77 mm, 53.6 mm, 499 cc

COOLING : Double Pass Radiator with 8 inch fan

DRIVE : Continuously Variable Transmission

ELECTRONICS : Pulse P2 Battery, PE3 ECU

ENGINE : Yamaha Genesis 80FI

FR/RR TRACK : 48/46 inches

FRAME : 4130 Steel Frame

FUEL SYSTEM : Single-rail EFI

FUEL TYPE : 93 Octane Gas

MATERIAL : 4130 Steel

MPD : 75 hp @ 9500 rpm

MPT : 42 ft-lbf @ 9200 rpm

OLWH : 122.63 in, 47.2 in, 57.9 in

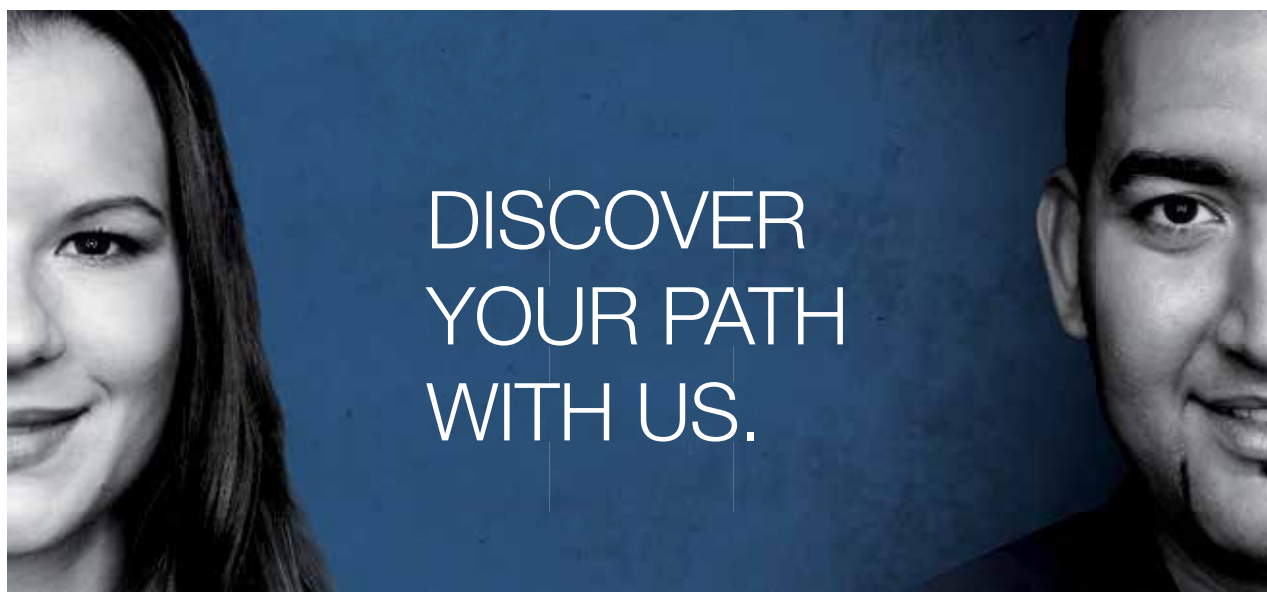
SUSPENSION : Double Unequal Length A-Arms. Push-rod Actuated Springs

TIRE : 10 x 6.0 - 18 R25B Hoosier

UNIQUE : Continuously Variable Transmission

WEIGHT : 605 lbf

WHEELBASE : 65 in



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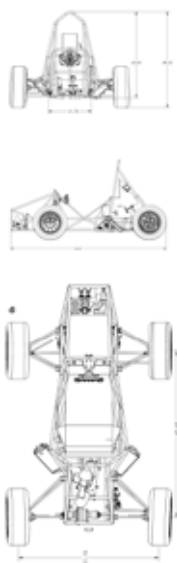


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The WP1/1 is the first iteration of a new development cycle for the WPI Racing team, built to embrace data driven design and systems integration. The entirely new electronics systems provides innovative driver aids such as a fully automatic five speed gearbox, traction control, live wireless telemetry, and driver coms. The first generation ground effect aerodynamic package provides a lightweight and low drag solution to downforce production, with integrated instrumentation for design validation. We would like to thank our sponsors, advisers, and families who have supported the development of our 2016 car.

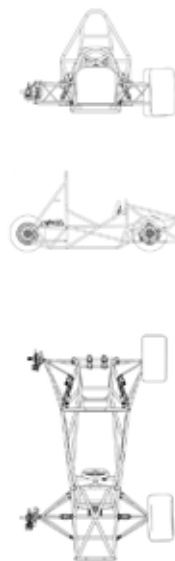


BRAKE : F: Wilwood Dynalite, R: Wilwood PS-1, Chromoly drilled floating rotors
BSCD : 95mm/63.4mm/1 cylinder/449cc
COOLING : Dual side mount radiators, dual 150CFM fans
DRIVE : Chain drive, clutch pack limited slip differential
ELECTRONICS : Haltech Elite 1500 ECU, Custom vehicle control modules, wireless telemetry
ENGINE : Yamaha YFZ450R
FR/RR TRACK : FR: 1332mm / RR: 1328mm
FRAME : TIG welded chromoly tubular space frame
FUEL SYSTEM : Returnless in-tank pump, single port fuel injector
FUEL TYPE : 93 Octane
MATERIAL : 4130 chromoly steel, 6061/7075 aluminum, fiberglass
MPD : 33.5 kW (8700 rpm)
MPT : 39.3 Nm (7200 rpm)
OLWH : L:2810mm W:1525mm H:1227mm
SUSPENSION : Pullrod actuated dual unequal length a-arm
TIRE : Hoosier 20.5x7.0-13 R25B
UNIQUE : Custom steering wheel controls, automatic gearbox, electronic throttle
WEIGHT : 270 kg / 595 lb
WHEELBASE : 1537mm / 60.5 in



The 2016 UNC Charlotte Formula SAE car, the UNCC-4916, is the second iteration of last year's lightweight 4915. The 4916 increased stiffness through the reworking of chassis tube locations while maintaining a low center of gravity and adding minimum weight. The 4916 also features revamped braking and cooling systems to alleviate brake fade and overheating issues seen in the past. The car is again powered by the reliable KTM 525 EXC that has powered previous entries, but now utilizes a dual muffler design to lower the sound. Lastly, the driver is comfortably sat in a carbon fiber seat with custom molded foam inserts, and can see full vehicle diagnostics with the car's Motec C125 dash. The 4916 was designed with speed, light weight, and durability in mind as the team aims to improve on recent Michigan results by quickly passing tech and successfully completing all events.

We would like to thank all of our sponsors, industry partners, and advisors who have supported us along the way and ensured we produced the best vehicle we could. Without them none of this would be possible.



BRAKE : Tilton 77 master cylinders with Wilwood PS-1 calipers
BSCD : 95mm bore / 65mm stroke / single cylinder / 510cc
COOLING : Side mount radiator with electric fan
DRIVE : Drexler differential
ELECTRONICS : Motec M400 ECU / Motec C125 dash
ENGINE : KTM 525 EXC
FR/RR TRACK : Front: 48 inches Rear: 47 inches
FRAME : Steel tube frame
FUEL SYSTEM : EFI with stock injector and pump
FUEL TYPE : 93 octane
MATERIAL : 4130 steel
MPD : 49HP @ 7800 RPM
MPT : 38 ft-lb @ 6200 RPM
OLWH : Length: 83in / Width: 58in / Height: 40in
SUSPENSION : Double wishbone (front and rear)
TIRE : 18.0x6.0-10 Hoosier LCO
UNIQUE : Dual Supertrapp mufflers
WEIGHT : 525 lbs
WHEELBASE : 60 inches

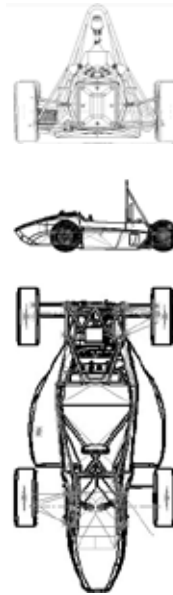




"if you're havin' trouble fixing something, get a bigger hammer" Pat Harkins

The fifth vehicle to be designed and built in a one-year cycle, the BFKR-16 from Washington University in Saint Louis marks the first car to feature an aerodynamic kit. The vehicle also features a new turbocharged drive train in the pursuit of more power. Refining the venerable BFKR platform, the front suspension has been made more compacted to reduce aerodynamic drag, and the cooling system has been integrated into the body design. The new BFKR-16 builds on previous lessons, utilizing exotic materials in the construction of body panels, aerodynamic features, and cockpit areas. Combined with the high-power turbo engine, the BFKR-16 seeks to be the biggest hammer this year.

This one's for Pat



BRAKE : Iron Disc/2 Piston Calipers
BSCD : 67 mm/42.5 mm/4/599 cc
COOLING : Single pass water to air heat exchanger
DRIVE : Chain drive, clutch-type differential
ELECTRONICS : AEM EMS-4, Custom Wireless Telemetry and Data Collection
ENGINE : Yamaha YZF-R6
FR/RR TRACK : 1219 mm/ 1181 mm
FRAME : 4130 Space Frame
FUEL SYSTEM : Multi-Port Fuel Injection
FUEL TYPE : 93 Octane
MATERIAL : 4130 Steel, CRFP
MPD : 85 HP@11,500
MPT : 45 ft.lbs@7000
OLWH : 2663 mm/ 1408 mm/ 1171 mm
SUSPENSION : Double Unequal Length A-Arm/Pushrod
TIRE : Hoosier 20.5x7.0-13 R25B
UNIQUE : Wireless Telemetry, Undertray, Bigger Hammer
WEIGHT : 285kg
WHEELBASE : 1600mm



United States



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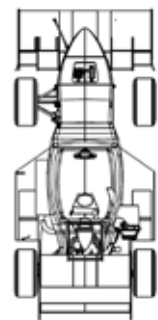
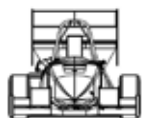


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RIT returns from its strong showing last year at Formula SAE Michigan with a completely redesigned car. F24 is a product of extensive simulation, design, and testing with special considerations given to the reliability of the car and the ergonomics of the driver interface. To improve the reliability of the car, a new system of failure reports and tracking has been implemented along with our already in place system of standardized design reviews, standardized factors of safety along with a failure modes effects analysis for every subsystem of the vehicle. A one piece CFRP monocoque, reliable single cylinder engine, and RIT developed braking system are just a few highlights of the RIT vehicle built for performance, efficiency, and drive-ability.



BRAKE : RIT Designed Calipers, Pistons, Rotors, and Adjustable Pedal Box
BSCD : 95mm/63.4mm/1 Cylinder/ 449cc
COOLING : Side-mounted single core radiator and duct
DRIVE : 4 speed transmission, Rear wheel chain drive, CFRP Halfshafts
ELECTRONICS : Motec M400, Motec EDL3, Racepack Smartwire
ENGINE : Yamaha WR450f
FR/RR TRACK : 1143 mm/45 in
FRAME : CFRP Monocoque
FUEL SYSTEM : RIT Developed Port Fuel Injection
FUEL TYPE : 100 Octane
MATERIAL : Carbon Fiber Reinforced Plastic / Aluminum Honeycomb
MPD : 9400
MPT : 7100
OLWH : 3000mm/118in, 1359mm/53.5in, 1143mm/45in
SUSPENSION : Unequal, Non-Parallel, Double A-arm
TIRE : 18-6x10 Hoosier R25B
UNIQUE : 1 piece CFRP monocoque, RIT developed complete braking system
WEIGHT : 480 lbs
WHEELBASE : 1651mm/65in

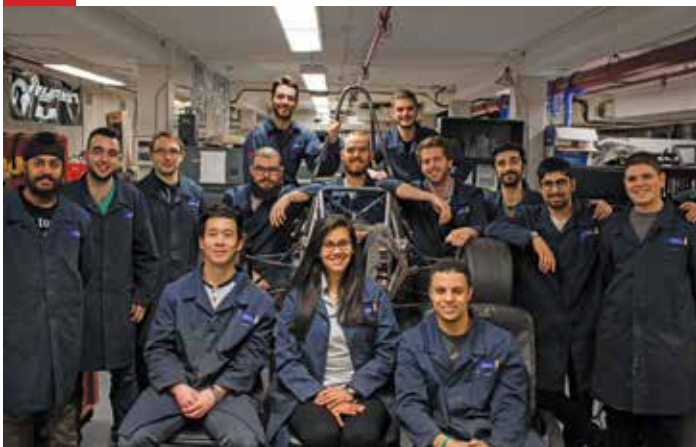


In the spirit of the competition, our team targets the market of newcomers to open-wheel autocrossing. The needs expressed by this market are to have a vehicle that maximizes the learning curve of the driver while remaining affordable. In the autocross world, racers are their own engineering team and mechanics so the vehicle must be as simple as possible. Simply put, FSS Racing's design goals in order of priority for the F2016 are an easy to drive, easy to adjust, affordable and reliable Formula SAE car.

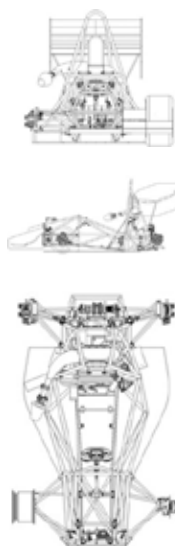


BRAKE : FR: Wilwood Gp200 RR:Ap racing cp4226
BSCD : 77 mm /53.6 mm / 2 cyl. / 499 cc
COOLING : Water cooled / one radiator
DRIVE : BRP CVT with custom reducer
ELECTRONICS : Old School AEM series 1 for Honda S2000
ENGINE : Yamaha Genesis 80Fi
FR/RR TRACK : 1150 mm / 1150 mm
FRAME : Steel space frame
FUEL SYSTEM : Bosch fuel pump / Yamaha injectors
FUEL TYPE : 93 octane
MATERIAL : 1020 steel, aluminum, magnesium, heat shrink cloth , carbon fiber
MPD : 62 hp @ 11000 rpm
MPT : 30 lb-ft @ 10000 rpm
OLWH : 2885 mm / 1350 mm / 1106 mm
SUSPENSION : double A-arm / push rods / Öhlins shocks
TIRE : hoosier 13 in / r25b
UNIQUE : Tractor exhaust note
WEIGHT : 600 lb
WHEELBASE : 1550 mm





The overall design objective this year was to build a reliable car that would complete all dynamic events, having not done so the previous year. Emphasis was placed on reduction of weight and unused space on the car. This led to decrease of wheelbase by 6", from previous car, to 63". Additional reduction of weight and unsprung mass was achieved by switching to 10" rims.



BRAKE : 183 mm OD, 4 mm Thick Rotors, AP Racing Calipers
BSCD : 67/42.5/4/599.8
COOLING : Single Core Dual Pass Radiator, 10" x 8", 780 cfm fan
DRIVE : Chain Driven
ELECTRONICS : Megasquirt III Pro ECU
ENGINE : Yamaha 2007 YZF R6-R
FR/RR TRACK : 1211/1139 mm
FRAME : Tubular Space Frame
FUEL SYSTEM : DENSO 235 cc/min Fuel Injectors, Honda F4i Non-Adjustable Pressure Regulator
FUEL TYPE : 93 Octane
MATERIAL : Stell, Aluminum, CFRP, Ultem
MPD : 5500
MPT : 5500
OLWH : L: 2981 mm, W: 1472 mm, H: 1262 mm
SUSPENSION : Non-parallel, unequal length, pushrod actuated, Penske Racing shocks
TIRE : 18.0 x 7.5-10, R25B Hoosier
UNIQUE : 3D Printed Plenum, CAN Bus
WEIGHT : 650
WHEELBASE : 63"



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— Elon Musk

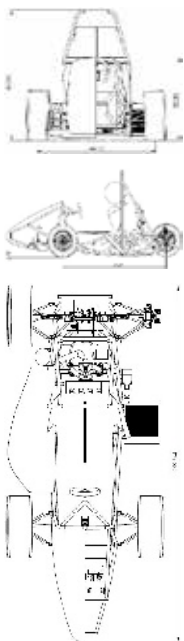
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Mississippi State Univ

Mississippi State University Formula SAE



For 2016, the Mississippi State University's Formula SAE team sought to produce a capable autocross vehicle with the average competitor in mind. The car is designed around someone who has moderate driving and mechanical skills and access to simple tools and equipment. The design is the work of learning underclassmen with the goal of building a robust and simple car while also providing a level of leading edge in engineering design. The team set design goals to make the vehicle drivable, manufacturable, marketable, and easily maintainable. These goals resulted in a steel space frame vehicle driven by a Honda CBR 600 F4I engine adapted with mechanical paddle shifters and unequal length double wishbone suspension on 10 inch tires.



BRAKE : Wilwood PS-1 Caliper / Tilton Master Cylinders
BSCD : 67mm / 42.5mm / 4cyl / 599cc
COOLING : Side Mount Radiator
DRIVE : Chain Drive / Drexler Differential
ELECTRONICS : MS3-Pro ECU
ENGINE : Honda CBR600 F4i
FR/RR TRACK : 44" / 44"
FRAME : Space Frame
FUEL SYSTEM : Port Injection / Stock Rail
FUEL TYPE : E85
MATERIAL : 4130 Steel
MPD : 13000
MPT : 8500
OLWH : 103", 50", 48"
SUSPENSION : Dual Unequal Length Wishbone
TIRE : 18.0 x 6.0-10 R25B Hoosiers
UNIQUE : Mechanical Paddle Shifting
WEIGHT : 650lb
WHEELBASE : 61"



US Air Force Academy

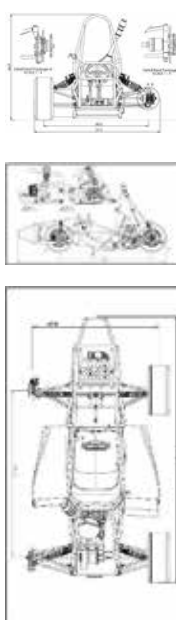
Air Force Racing



USAF Academy Racing designed S1.6 with three goals in mind. Create a simple, reliable, lightweight car. With 17 fully committed team members, 2016 USAFA Racing has reached a new standard with S1.6. Intense analysis and design scrutiny went into every subsystem and component in S1.6, creating an entirely new car for the 2016 competition. Months of rigorous testing also went into the completed vehicle helping us obtain our goal of reliability. The design is wrapped up aesthetically with a USAF Thunderbirds livery.

The US Air Force Academy challenges students with some of the best academic curriculum in the nation. Military training as well as athletic competition and standards comprise the four years at the institution. All students will become officers in the United States military upon graduation.

Go Air Force! Sink Navy!



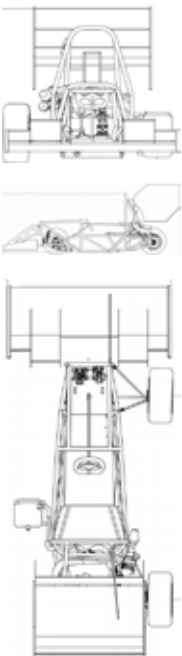
BRAKE : 4-wheel slotted cast iron rotors
BSCD : 95.5mm/62.8mm/1 cylinder/450cc
COOLING : Side-mounted aluminum single core radiator with fan
DRIVE : Chain-driven automatic torque biasing Taylor differential
ELECTRONICS : PE3 ECU, AIM Evo5 data acquisition
ENGINE : Suzuki LT-R450
FR/RR TRACK : 1143mm (45 in)
FRAME : 4130 Steel tube space frame
FUEL SYSTEM : Keihin 450cc fuel injection
FUEL TYPE : 93 Octane
MATERIAL : Welded aluminum tank
MPD : 30.6 kW @ 9000 RPM
MPT : 38.9 N-m @ 7500 RPM
OLWH : 2464, 1377, 1141mm (97, 54, 45 in)
SUSPENSION : Double unequal length A-arm, direct actuation
TIRE : 18.0 x 6.0-10 R25B Hoosier
UNIQUE : USAF Thunderbirds livery, ejection seat, top-secret Navy sinking technology
WEIGHT : 510 lbs
WHEELBASE : 1549.4mm (61 in)





After one of our most successful seasons ever, Kettering University Motorsports looks to improve upon our design this year. GMI 2016 is the second turbo-charged car from Kettering FSAE. Through development and improved designs we are confident in another successful season.

We would like to thank all of our sponsors for their support in the pursuit of the spirit of SAE.



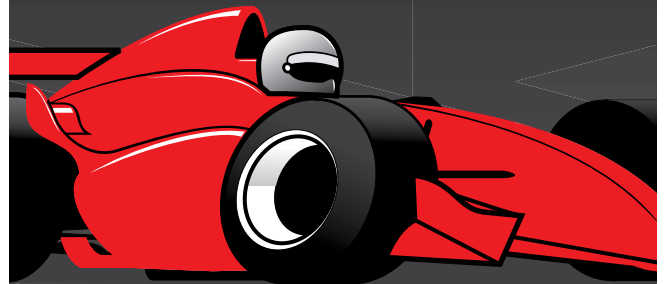
BRAKE : 1018 Steel Rotor, Tilton MC, Wilwood Calipers
BSCD : 95mm / 62.4mm / 1 cyl / 450cc
COOLING : Side mounted radiator
DRIVE : Chain driven ATB differential
ELECTRONICS : Custom PCB fuse box, Woodward 70 pin ECU
ENGINE : Yamaha WR450F
FR/RR TRACK : 1183 mm, 1183 mm
FRAME : 1018 Mild Steel
FUEL SYSTEM : Dual stage EFI
FUEL TYPE : E85
MATERIAL : Steel, Aluminum, Carbon
MPD : 65 hp, 11200 rpm
MPT : 53 Nm, 6800 rpm
OLWH : 3060 mm, 1320.8 mm, 1193 mm
SUSPENSION : Double unequal length A-Arm with Pull Rod Front and Push Rod Rear
TIRE : 18x6.0 - 10 Hoosier LCO
UNIQUE : More boost!
WEIGHT : 525 lbm (238 kg)
WHEELBASE : 1676 mm



United States

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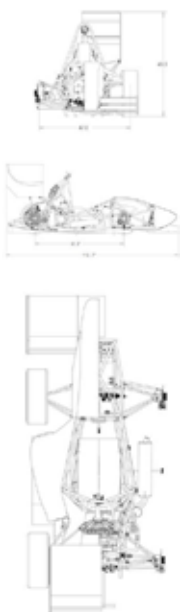
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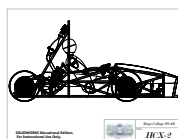
The 2016 entry from Purdue University is a steel space frame, four cylinder car utilizing SLA suspension geometry and an aerodynamics package. The target vehicle performance goals are a lateral steady state acceleration of 1.35 g at 25 mph, a 250 foot acceleration time of 4.1 sec, 130 lbs downforce at 40 mph, and an average fuel economy of 12.5 mpg. In general, Creo Parametric was used for CAD design and assembly, ANSYS was used for finite element analysis (FEA), Ricardo-WAVE was used for engine analysis, and STAR-CCM+ was used for computational fluid dynamics (CFD).



BRAKE : Cross-drilled rotors, 2-piston Wilwood (F), 2-piston AP Racing (R)
BSCD : 67.0 mm × 42.5 mm, 4 cyl, 599 cc
COOLING : Single core radiator, electric water pump
DRIVE : Chain drive with Drexler LSD
ELECTRONICS : MoTeC M130 ECU, PDM15, C125 Dash and Datalogger
ENGINE : Yamaha YZF-R6
FR/RR TRACK : 47/46 in.
FRAME : 4130 Chromoly Steel spaceframe
FUEL SYSTEM : Sequential multiport fuel injection
FUEL TYPE : 93 Gasoline
MATERIAL : 4130 steel, aluminum, carbon fiber
MPD : 91.46 hp @ 12000rpm
MPT : 41.57 ft-lb @ 8000rpm
OLWH : L: 117.5 in, W: 55.5 in, H: 46.25 in
SUSPENSION : SLA Double wishbone, Ohlins shocks, carbon control arms
TIRE : Hoosier R25B 20.5x7x13
UNIQUE : Adjustable pedal box, driver adjustable brake bias and traction control
WEIGHT : 620 lbs
WHEELBASE : 61 in.



Hope College Formula SAE produces a reliable, low maintenance, cost effective, and exciting vehicle. This allows the owner to fulfill their individual passion of being a competitive racer without excessive expenses. An initial concept of reliability and cost effectiveness naturally guides design decisions towards more readily available materials. Advanced materials may slightly improve performance but at a dramatic cost, which is then passed on to the consumer. Thus, using traditional materials allows a vehicle to be produced that is cost effective, reliable, and appealing to the consumer.

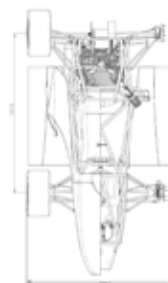


BRAKE : 10 inch rotors w/ Wildwood Calipers
BSCD :
COOLING : Aluminum externally mounted radiator
DRIVE : Chain Driven
ELECTRONICS : PE3 ECU w/ LM2 feedback
ENGINE : 2002 CBR 600F4i
FR/RR TRACK : (1320/1270) / (52/50)
FRAME : 1020 Cold Rolled Steel
FUEL SYSTEM : Aluminum fabricated tank w/ steel braided fuel delivery
FUEL TYPE : 93
MATERIAL :
MPD :
MPT :
OLWH :
SUSPENSION : Independent SLA Suspension
TIRE :
UNIQUE :
WEIGHT :
WHEELBASE : 1765.3mm / 69.5in.





KSU Motorsports focuses on delivering a simple, reliable, driver-friendly racecar by focusing on performance: lowering the center of gravity, yaw moment, and weight. This is achieved by low part count, careful packaging, and multi-function parts. Some examples include a 2 lb spool type differential and a 2-piece fully mechanical shifter. The powerplant, a K3 Suzuki GSX-R600, provides reliable power. Our car features a 3D-printed intake providing a lightweight, fast manufacture solution. Most importantly, our car wouldn't be able to compete without the incredible growth of our team this season. A huge thank you goes out to all of the officers and new members who put all of the hours in and out of the shop to build a competitive, high-performing, and beautiful racecar.



BRAKE : 3 Caliper Floating
BSCD : 67.0 mm / 42.5 mm / 4 / 599 cc
COOLING : Dual Radiator
DRIVE : Chain
ELECTRONICS : AEM EMS-4
ENGINE : Suzuki K3 GSX-R600
FR/RR TRACK : 49.8 in / 49.6 in
FRAME : 4130 Chromoly Spaceframe
FUEL SYSTEM : Inline FP
FUEL TYPE : 93 Octane
MATERIAL : Machined 7075 Uprights and Hubs, Ultem 9085 Intake
MPD : 11000
MPT : 8000
OLWH : 104 in / 58.4 in / 45.9 in
SUSPENSION : Cane Creek Inline Air Sprung 4-way damping
TIRE : Hoosier 18x7.5/10 R25B
UNIQUE : Rear-View Camera
WEIGHT : 535 lbs
WHEELBASE : 63.5 in



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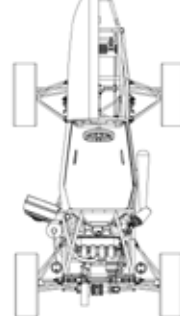
At the heart of the 2016 Aces Racing design was the transition from a manual 5 speed transmission to a Continuously Variable Transmission. A new engine platform was needed to be compatible with the transmission selection. The team decided the Polaris 570cc engine and transmission would be the perfect match due to power output, parts availability, and manufacturer support. With the new powertrain the team also had to change the frame design. The frame was designed to be smaller and lighter than the previous year's frame while keeping the torsional rigidity the same. Another design change was in the suspension design. This year the design went from carbon fiber a-arms to steel a-arms. A new intake design was made as well as a new aerodynamic design for the 2016 car. This year's focus was on creating a simple cost effective vehicle which could be easily manufactured. All of the designs were centered on this idea. By creating a cost effective vehicle the team has ensured that the Aces Racing tradition will continue. Another focus was to validate all of the designs through testing. Testing procedures were made to allow the team to get accurate results so that the designs could be validated.



BRAKE : Tilton77-seriesMaster Cylinder, Wilwood PS-1
BSCD : 3.9 in/2.9 in/Single/567cc
COOLING : AFCO Racing
DRIVE : Polaris CVT, Drexler Formula Student LSD
ELECTRONICS : Performance Electronics ECU
ENGINE : Polaris 570
FR/RR TRACK : 1270 mm/ 50 in, 1270 mm/50 in
FRAME : 4130 Chromoly Steel Space Frame
FUEL SYSTEM : Polaris Factory
FUEL TYPE : 93 Octane
MATERIAL : Fiberglass Body and Undertray
MPD : 7000
MPT : 6400
OLWH : 2700 mm/106.3 in, 1550 mm/61 in, 1200 mm/47.2 in
SUSPENSION : Double Wishbone, Direct Actuation, AFCO Racing Shocks
TIRE : 18.0X6.0-10 inch, R25B, Hoosier
UNIQUE :
WEIGHT : 450
WHEELBASE : 1549 mm/ 60.98 in

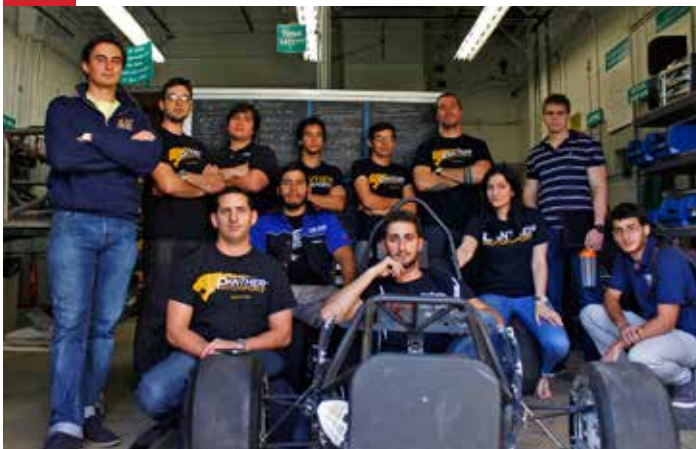


Osprey Racing presents the fifth generation Formula SAE car, SD5. This car was focused on validation and reliability. The car is a non-aero vehicle running a four cylinder engine with 13 inch wheels focused on mechanical grip, and implements a pneumatic shifting system, modified four speed gear train, and new data acquisition systems.

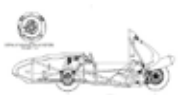
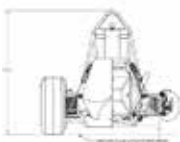


BRAKE : 4340 Rotors; 77 Series Master Cylinders
BSCD : 67mm; 42.5mm; 4; 599cc
COOLING : Single Core Radiator
DRIVE : 520 Chain Drive
ELECTRONICS : MoTeC
ENGINE : Honda CBR600RR
FR/RR TRACK : 48in; 47in
FRAME : 4130 Chromoly Tube
FUEL SYSTEM : Low Pressure Multipoint Port Fuel Injected Return System
FUEL TYPE : 93
MATERIAL : Zip Ties and Duct Tape
MPD : 10,500rpm
MPT : 8,500rpm
OLWH : 106in; 55in; 42.5in
SUSPENSION : Push Rod Rear; Pull Rod Front
TIRE : 20.5inx7inx13in; R25B
UNIQUE : 4 Tires
WEIGHT : 605lb
WHEELBASE : 62in





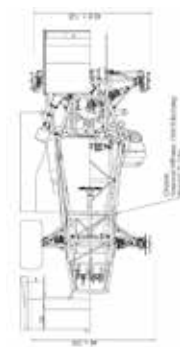
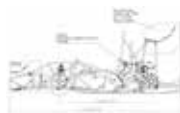
Our primary team goals are to complete all dynamic events and rank within the top 50 teams in overall scoring. To accomplish this we have chosen to continue developing our single cylinder concept car with an emphasis on simplicity and doing things better. Because we are a relatively young team this concept will allow us to achieve our goals while not exceeding our level of resources and experience. Statistical analysis of the dynamic event results from 2012 to 2015 was used in major target setting. Point mass analysis was then used to simultaneously identify the general performance requirements for each system. Each team then developed their systems based on those requirements resulting in a car in which systems complement each other while staying true to our concept. Because the car is an iteration of last year's car, there was also a strong emphasis on improving existing designs and correcting issues that were identified during design judging.



BRAKE : FULL FLOATING/STAINLESS STEEL/178MM DIA/5MM/WILWOOD PS1/28MM PISTON
BSCD : BORE 95 MM/STROKE 63.4MM/1 CYLINDER/449CC
COOLING : WATER COOLED RADIATOR WITH FAN
DRIVE : CHAIN DRIVEN
ELECTRONICS : FUSEBOX AND RELAYS WITH PE3
ENGINE : 2009 YAMAHA YFZ450R
FR/RR TRACK : 1181.1 MM/ 1169.9 MM
FRAME : 4130 STEEL ROUND TUBING
FUEL SYSTEM : FUEL INJECTED
FUEL TYPE : 93 OCTANE
MATERIAL : 4130 STEEL
MPD : 8400 RPM
MPT : 7800 RPM
OLWH : 113.5" X 48" X 54"
SUSPENSION : DOUBLE WISHBONE PUSH ROD SYSTEM. A-ARMS OF UNEQUAL LENGTH
TIRE : 6/18 -10 LCO 7 Wide
UNIQUE : CUSTOM LIMITED SLIP DIFFERENTIAL
WEIGHT : 550
WHEELBASE : 1525MM



University of Cincinnati Bearcat Motorsports consistently aims towards competing at the highest level possible. This year our team decided to implement pneumatic paddle shifting in order to increase driver safety and decrease shift time. The engine power band was designed based off track data to determine the rpm range the car was most frequently in, and where to focus the greatest torque. A new aero package iteration was created to improve lift and drag. All designs were made to keep the center of gravity as low as possible.



BRAKE : ISR 22-048 4 Piston Front Calipers, AP 4226 2 Piston Rear
BSCD : 98mm Bore / 63.4mm Stroke / Single Cylinder / 478cc Displacement
COOLING : 9"x7" Core C
DRIVE : Chain Drive
ELECTRONICS : PE3, MoTeC ADL4, CAN Bus Communication
ENGINE : Yamaha YFZ450R
FR/RR TRACK : 1117.6mm / 44" Front, 1079.5mm / 42.5" Rear
FRAME : Laser Cut and TIG Welded
FUEL SYSTEM : Performance Electronics, Semi-Sequential Port Injection
FUEL TYPE : 93 Octane
MATERIAL : Steel, Aluminum, Carbon Fiber
MPD : 10500
MPT : 7000
OLWH : 2844.8mm (112") L x 1295.4mm (51") W x 1200.15mm (47.25") H
SUSPENSION : Unequal Length A-Arm, Direct Acting Coilover
TIRE : Hoosier 18x6x10 R25B
UNIQUE : Pneumatic Shifting
WEIGHT : 530lbs
WHEELBASE : 1549.4mm / 61"



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Old Dominion Univ

Old Dominion University Formula



Old Dominion University is proud to present its 2016 vehicle entry to the Formula SAE Michigan Competition. The design of the vehicle was simply to obtain the optimal balance of performance, weight and the ability to manufacture. Through the use of innovative technology, the team incorporated a revised suspension along with a prominent effort toward the aerodynamics package via the design of diffuser, side pods, and nosecone. The Old Dominion FSAE vehicle--comprised of tubular alloy and the removal of tubing, and weight reduction techniques - accomplished a 90-pound weight reduction from last year. Other materials such as aluminum castings, titanium, and carbon fiber were used to shape the car. Aluminum casting are used for the uprights, differential carrier, bevel gear box, and steering rack. Titanium has been used for the spindle wheel assembly. Carbon fiber is used as suspension components on the front and rear of the vehicle. The car is powered by a four-cylinder Suzuki GSX-R600 motor, with a chain driven, and WRD CDD differential. Novel changes included in the 2016 vehicle are: the incorporation of carbon fiber suspension components and aerodynamics package, newly designed impact attenuator, driver's seat, and oiling/cooling system.



BRAKE : 4-Wheel disc brakes, Wilwood Calipers, proportioning valve
BSCD : 67.0 mm / 42.5 mm / 4 cylinders / 600cc
COOLING : Side pod mounted radiator with electric fan
DRIVE : Chain Drive, WRD CDD 1000 Differential
ELECTRONICS : PE-3 ECU, MoTec C185
ENGINE : 2007 Suzuki GSX-R600
FR/RR TRACK : 1397 mm / 1397 mm
FRAME : 4130 Chromoly Steel round and square tubing
FUEL SYSTEM : EFI, custom aluminum fuel tank
FUEL TYPE : 93 Octane
MATERIAL : Steel, Aluminum, Fiberglass, Carbon Fiber
MPD : 14,000
MPT : 11,500
OLWH : 2768.6 mm, 1524 mm, 1244.6 mm
SUSPENSION : Double unequal length push rod
TIRE : Hoosier 20.5 x 7.0" 13 R25B
UNIQUE : Custom Aerodynamics Package
WEIGHT : 644 lbs
WHEELBASE : 1521 mm



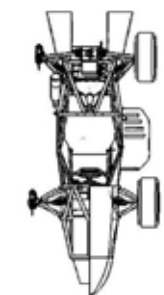
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Univ of Alabama - Tuscaloosa

Crimson Racing



The CR16 represents the culmination of our philosophy of light-weight reliability. Our design began with, and was centered on, both a race-tuned, 599cc Yamaha engine and a suspension focused on maximizing adjustability and driver control. To this end, each suspension component was redesigned to be more compact while significantly increasing strength. A new intake and exhaust were designed to maximize the output torque of the R6. The frame was optimized to decrease weight while maintaining torsional rigidity. These systems are connected by a sophisticated electronic control and data acquisition system.



BRAKE : Floating Disc
BSCD : 65.5mm/44.5mm/4/600cc
COOLING : Water Cooled
DRIVE : Chain, Custom Differential
ELECTRONICS : PE3 ECU, AIM Data Aq
ENGINE : 2006 Yamaha R6S
FR/RR TRACK : (58in/55in)
FRAME : Steel Spaceframe
FUEL SYSTEM : Fuel Injected
FUEL TYPE : 100 Octane
MATERIAL : Steel, Aluminum
MPD : 80 hp (9500)
MPT : 45 lb-ft (8500)
OLWH : 110in, 57in, 42.5in
SUSPENSION : Double A-Arm, Direct Actuation Shocks
TIRE : 20.5 x 7.0-13 Goodyear
UNIQUE :
WEIGHT : 635 lbs
WHEELBASE : 60.5 inches



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Clarkson University FORMULA KNIGHTS RACING



The goals for Clarkson University's 2016 car were to build a more reliable vehicle and improve on our 2014 car. To do this we are decreasing weight by about 50 pounds and making the rear of the car more compact. We have also implemented a new engine and ECU to improve performance and reliability.



BRAKE : 4 Wheel disc brake
BSCD : 67mm/ 42.5mm/ 599cc/ 4 cylinder
COOLING : Water cooled single radiator
DRIVE : Chain driven Torsen differential
ELECTRONICS : PE3 ECU
ENGINE : Honda CBR 600 RR
FR/RR TRACK : Front (1219/48) Rear (1219/48)
FRAME : 4130 Space frame
FUEL SYSTEM : Electronic fuel injection
FUEL TYPE : 93 Octane
MATERIAL : 4130 Chromoly steel
MPD : 12000 rpm
MPT : 11500 rpm
OLWH : Length (2717.8/107), Width (1410/55.5), Height (1181.1,46.5)
SUSPENSION : SLA Double A-Arm
TIRE : Hoosier 20x7.0-13 R25B
UNIQUE : Dry sump lubrication, hand clutch
WEIGHT : 650
WHEELBASE : (1626/64)

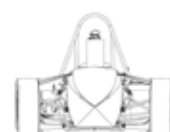


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Villanova Univ Villanova Formula SAE



Villanova University's 2016 entry into Formula SAE Michigan (hereafter referred to as VU08) represents the team's eighth competing year. In order to sustain and advance the previous year's momentum and success, the team has worked to develop a more structured and integrated approach to the design of VU08. Using a points-based analysis and a custom lap simulator, the team determined three major areas of focus for design: reliability, drivability, and vehicle dynamics performance. These goals have been realized through a team wide focus on the minimization of system compliance, the implementation of a traction control module and automated clutch system, and multiple performance upgrades. The team looks forward to competing with VU08 at FSAE Michigan!



BRAKE : Outboard floating rotors, 4 piston ISR front, 2 piston AP rear
BSCD : 67.0mm/42.5mm/4/599cc
COOLING : Water cooled
DRIVE : Chain
ELECTRONICS : PE3 ECU, wireless data acquisition system
ENGINE : Yamaha YZF-R6r
FR/RR TRACK : 48"/46"
FRAME : Balsa wood tubular space frame
FUEL SYSTEM : Fuel injected
FUEL TYPE : 100 Octane
MATERIAL : Trimethylxanthine
MPD : 13500
MPT : 9200
OLWH : 97"/55"/44"
SUSPENSION : Double unequal length A-arm, pushrod actuated Ohlins TTX25
TIRE : Hoosier R25B 7.0x20.5-13
UNIQUE : Super lightweight aerodynamics package
WEIGHT : 555 lb
WHEELBASE : 60"



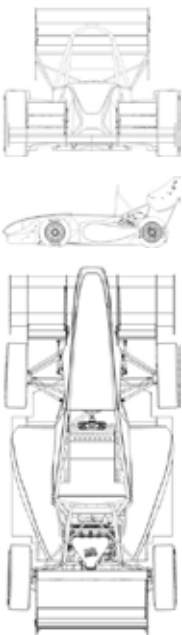


Univ of Texas - Arlington

UTA Racing



The goal for UTA Racing's 2016 car was to increase specific power while maintaining handling performance. F16's fully-adjustable suspension features CFRP wheels with double unequal length a-arms, pull rod actuation, and anti-roll bars. Lightness was added where appropriate. In the pursuit of increasing the specific power UTA has chosen to implement a CBR600RR engine with a CFD-optimized SLA printed intake. Engine output is distributed to the tires through an automatic torque biasing differential. Lateral stability is provided by 6061-T6 aluminum hubs, uprights, and wheel centers. This, combined with a new 4130 steel chassis with excellent torsional rigidity and proven suspension kinematics results in an ideal racing vehicle. To maximize F16's performance capability, a lightweight CFRP aerodynamic package consisting of a front and rear wing with electro-mechanical drag reduction and an undertray diffuser is utilized. The driver interface consists of an adjustable pedal box, telescoping CFRP steering wheel, and interchangeable seat backs to suit different drivers.



BRAKE : Upright Tilton master cylinders, Wilwood GP200 Brake calipers
BSCD : 67mm/42mm/4/599cc
COOLING : Custom Griffin radiator with Spal fan
DRIVE : Chain drive, Taylor Race differential
ELECTRONICS : PE3 ECU
ENGINE : Honda CBR600RR
FR/RR TRACK : 1245mm/49", 1194mm/47"
FRAME : Space frame
FUEL SYSTEM : Electronic Fuel Injection
FUEL TYPE : 100 Octane
MATERIAL : 4130 Steel
MPD : 87 (11500)
MPT : 45 (9000)
OLWH : 3070mm/121", 1375mm/54", 1200mm/47.25"
SUSPENSION : Double Unequal Length A-arms
TIRE : Hoosier 20.5x7.0-13 R25B
UNIQUE : Active Aerodynamics
WEIGHT : 590
WHEELBASE : 1676mm/66"



Auburn Univ

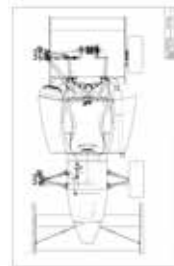
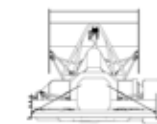
War Eagle Motorsports



Auburn Formula SAE presents AU2016, the 20th vehicle of a storied program. AU2016 features a Yamaha R6 motor, delivering the 82 highly-durable bhp and broad torque curves that the target market demands. The hybrid monocoque design allows for a light, stiff chassis that meets power/weight ratio goals while providing superior handling characteristics at the vehicle's limit. New for 2016 is a full aerodynamics package that allows AU2016 to explore the realm of high-downforce cornering and enhanced levels of grip.

None of this would be possible without our sponsors and community partners whose continued backing of our team, and ultimately our engineers, has helped us succeed in developing new technologies, and training bright engineers. It would be impossible to continue our work as AUFSAE without the time, money, and resources they have given to us.

War Eagle!



BRAKE : Floating Rotor, Adjustable Bias
BSCD : 67 mm, 42.5 mm, 4 Cylinders, 599 cc
COOLING : Dual Pass Radiator
DRIVE : Chain Drive, Salisbury Differential
ELECTRONICS : MoTec M800/PDM/C185, Bosch ETC, Wireless Telemetry
ENGINE : Yamaha R6
FR/RR TRACK : 1219.2 mm (48 in), 1193.8 mm(47 in)
FRAME : Hybrid Monocoque
FUEL SYSTEM : In-Tank Pump, Port Injection
FUEL TYPE : 93 Octane
MATERIAL :
MPD : 82.7 hp (10,500 RPM)
MPT : 43 ft-lbf (8,000 RPM)
OLWH : 2968 mm (116.8504 in), 1422 mm (55.98 in), 1200 mm (47.24 in)
SUSPENSION : SLA
TIRE : 10" R25B
UNIQUE :
WEIGHT : 560.5 lb
WHEELBASE : 1562.1 mm (61.5 in)





The Cooper Motorsports' 2016 Formula SAE entry represents continuous design improvements from previous entries that reflect the automotive industry's best practices. This year's team focused on utilizing the strengths of previous vehicles and improving upon its weaknesses. The team defined three major design goals: drivability, verification and validation, and weight reduction. These goals are reflected in each individual subsystem and are based on the team's evaluation of competition performance in the past few years.

The team would like to give special thanks to The Cooper Union, our faculty advisers, and our sponsors.

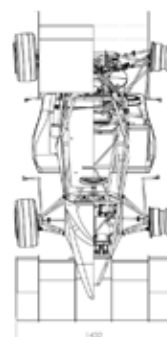
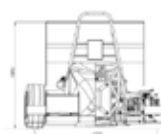


F2016 represents the eleventh Formula SAE® vehicle produced since beginning the FSAE series in 2005. The following goals were determined preceding the design process: quicken vehicle yaw response while maintaining lateral grip, increase engine power output by 50% while minimizing weight gains, and improve ergonomics.

USF Racing would like to sincerely thank the University of South Florida Student Government, USF College of Engineering, and all of its sponsors and supporters.



BRAKE : Wilwood Calipers, Custom CNC Rotors
BSCD : 67.0mm/42.5mm/4cyl/599cc
COOLING : Single Side Mounted Radiator. Overpowered Fan.
DRIVE : 520 Roller Chain. Drexler LSD Differential.
ELECTRONICS : Performance Electronics ECU. AIM G-Dash Dashboard.
ENGINE : Honda CBR 600RR
FR/RR TRACK : 48" Front. 46" Rear.
FRAME : 4130 Steel Tube Space Frame.
FUEL SYSTEM : Custom Tank. Sequential Port Injection.
FUEL TYPE : 93 Octance.
MATERIAL : 4130 Steel.
MPD : 10,600 RPM
MPT : 9,400 RPM
OLWH : 120" Long. 56" Wide. 44" Tall.
SUSPENSION : Double Unequal Length A-Arm, Pull Rod Actuated Spring and Damper.
TIRE : Hoosier 20.0x7.5-13 R25B
UNIQUE : Designed two stories underground in Manhattan
WEIGHT : 615 lbs with 150 lb driver
WHEELBASE : 60.5"

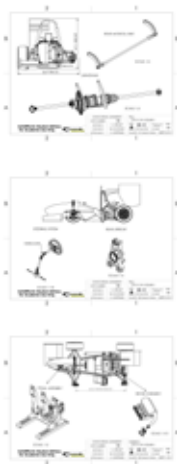


BRAKE : AP Racing calipers, Pagid Racing pads
BSCD : 100mm bore, 62.8 mm stroke, single cylinder, 493 cc
COOLING : Single pass radiator with 410 CFM fan
DRIVE : Chain drive, Quaife QFD7ZR
ELECTRONICS : DTA S80 ECU and AiM EVO4 datalogger
ENGINE : Suzuki LT-R 450
FR/RR TRACK : 50" (1270mm) front and rear
FRAME : 4130 steel tubular space frame
FUEL SYSTEM : Custom injection
FUEL TYPE : E-85
MATERIAL :
MPD : 9500
MPT : 7500
OLWH : 113" (2859mm) x 57" (1448mm) x 47" (1207mm)
SUSPENSION : Double unequal a-arms, Ohlins TTX25 dampers, pullrod front, pushrod rear
TIRE : 10x6" Hoosier LCO
UNIQUE :
WEIGHT : 510lb (231kg)
WHEELBASE : 60" (1524mm)





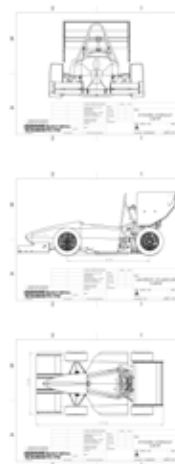
CFR15 is the 6th vehicle produced by the modern era of Concordia Formula Racing. This vehicle was designed as an iteration of the CFR14 vehicle which competed at FSAE Lincoln last summer. The primary goals for CFR15 were to improve reliability, increase low end torque, and improve the cooling properties of the engine and the brake discs. Concurrently the structural integrity and performance of the aerodynamic package was to be improved. Tire data was used to create a simulation model to better determine suspension setups and increase the performance of the vehicle. Extensive CFD, and physical structural tests were performed on the aero package to improve its integrity. The focus of the cooling performance of the engine and braking systems was to ensure that both systems are operating at their ideal operating temperatures. Thermal analysis was performed in order to optimize each design, and was validated using on-track testing to ensure the validity of these models. Furthermore, in order to provide a driveable vehicle, intake and exhaust runners were tuned, camshaft timing and fuel map were optimized using an engine dyno.



BRAKE : Floating Front 8.5" Dia and Rear 8" Dia .1875 THK 4140 Steel Slotted Rotor
BSCD : 67mm/42.5mm/4/599
COOLING : Side Mounted 13"x13"x1" Core Radiator, 1000 CFM, 11" Dia Rear Mounted Fan
DRIVE : Drexler Limited Slip Differential, Chain Drive
ELECTRONICS : MoTeC ECU Data Logging, Race Technology DL1 Data Logger, 12AV Inputs
ENGINE : Honda CBR600F4i
FR/RR TRACK : 1219mm/1168mm (48in/46in)
FRAME : 4130 Chromoly Steel Spaceframe
FUEL SYSTEM : Custom Fuel Rail, Stock Injectors and Aftermarket Regulator
FUEL TYPE : 93 Octane
MATERIAL : 4130 Chromoly Steel, Aluminium and Carbon Fibre
MPD : 8000-12000 RPM
MPT : 7000-10000 RPM
OLWH : 2629mm/1340mm/1151mm (103.5in/52.75in/45.3in)
SUSPENSION : Double Un-even A-arms, Push Rod Actuated with Horizontally Located Shocks
TIRE : 20.5 x 7 x 13, Hoosier R25B
UNIQUE : Custom Shift Drum, Drag Reduction System, and Pneumatic Shifting System
WEIGHT : 670
WHEELBASE : 1600mm/63in



Mizzou Racing is proud to introduce our 2016 entry into Formula SAE. Building on almost 30 years of Mizzou Formula SAE history, we have designed a car that champions reliability and drive ability, while also embracing creativity and innovation, testing our engineering limits. Starting with the bullet-proof Honda CBR 600RR, we have produced a formidable power train that reliably produces a supply of relentless but controllable power. We also focused heavily on putting that power to use. The use of Hoosier tires demands that our suspension be highly optimized to squeeze out every last bit of performance, so a premium was placed on maintaining optimum camber angles and reducing tire load fluctuation.



BRAKE : Outboard Disc
BSCD : 600cc 4-cyl
COOLING : Double-pass Radiator w/Fan
DRIVE : Chain drive w/Quaife Differential
ELECTRONICS : Yes
ENGINE : Honda CBR600RR
FR/RR TRACK : FR-1270mm/50in, RR- 1270mm/50mm
FRAME : 4130 Chromoly Spaceframe
FUEL SYSTEM : Aluminium Tank w/ External Pump
FUEL TYPE : 93 Octane
MATERIAL : Aluminium
MPD : 9500
MPT : 9500
OLWH : 2978.5mm/117in/1460.5mm/57.5in/1187.3mm/47in
SUSPENSION : unequal length double wishbone
TIRE : Hoosier R25B 20.5x7.0-13
UNIQUE : High Horsepower-to-GPA ratio
WEIGHT : 610lb
WHEELBASE : 1550mm/61in





Universit  Laval

UlaVal racing



UlaVal Racing's 2016 car's philosophy is no different than it's predecessors. As Newton once said, we are "standing on the shoulders of giants". We keep building on our solid foundations and work on every single detail of the car while focusing on our 5 main guidelines ; Easy manufacturing, driveability, low production cost, reliability and lightweight.



Univ of Utah

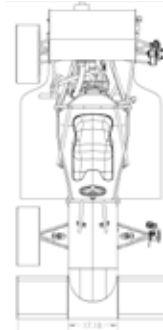
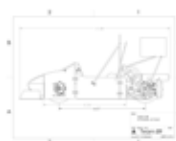
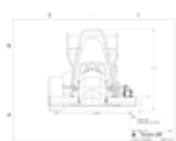
Formula U



Carbon fiber monocoque with a steel tube rear sub-frame. Carbon fiber is uni-directional IM8\M91 prepreg, core is Nomex honeycomb. The engine is a KTM 525 with a Garrett FT1241 turbocharger. The differential is a Drexler. Chassis layout and length is modified from last year with weight savings in mind. Multi-element airfoils are used for the front and rear wings; a flat plate under-tray and diffuser provide ground effects. The driver back position is 10° from the vertical, the main hoop braces extend forward to simplify the rear sub-frame design, and to provide an easier way for the driver to egress. Ball and socket front suspension points are used to lower weight and reduce bending loads at the monocoque interface. The suspension uses air springs for increased adjustability and handling. The drivetrain is a chain driven Drexler differential with RCV hubs and axles to lower weight. The transmission is actuated by a CO2 pneumatic system controlled by buttons on the steering wheel.



BRAKE : AP calipers / ductile iron rotors
BSCD : 67mm / 42.5m / 4 / 599 cc
COOLING : Two side mounted radiators with fans
DRIVE : Chain
ELECTRONICS : Motec M400 ECU / Student built ETC
ENGINE : Honda CBR600rr
FR/RR TRACK : 1180mm / 1155mm
FRAME : Steel space frame
FUEL SYSTEM : Electronic fuel injection
FUEL TYPE : E-85
MATERIAL : Steel, aluminum, carbon fiber, girlfriend tears
MPD : 52 kW (11 000 rpm)
MPT : 45 Nm (11 000 rpm)
OLWH : 2920mm / 1400mm / 1185mm
SUSPENSION : Double wishbone with pull rod front / push rod rear
TIRE : 10" Hoosier LCO
UNIQUE : All student built ETC
WEIGHT : 558 lb
WHEELBASE : 1525mm



BRAKE : 1.75" Single Piston Calipers
BSCD : 100.5 mm/ 95 mm/ 1/ 570 cc
COOLING : Rear mounted aluminum core
DRIVE : Chain driven, Drexler differential
ELECTRONICS : AEM EMS4 ECU, LiFePO4 Battery
ENGINE : KTM 525 w/ 5 speed transmission
FR/RR TRACK : FR: 1194 mm (47 in) RR: 1194 (47 in)
FRAME : Composite monocoque, steel sub-frame
FUEL SYSTEM : Single Bosch 1100 cc injector, 42mm throttle body
FUEL TYPE : E85
MATERIAL : IM8 unidirectional prepreg, Nomex honeycomb core, A513 steel tubing
MPD : 37 kW (50 hp) @ 6500 RPM
MPT : 50 Nm (37 ft-lbs) @ 6000 RPM
OLWH : L: 2820 (111 in) W: 1354 (53.3 in) H: 1269 (49.9 in)
SUSPENSION : Double A-Arm, air spring shocks
TIRE : Hoosier R25B 20.5 x 7.0-13
UNIQUE : Ball-and-socket front suspension mounting points
WEIGHT : 487 lbs (221 kg)
WHEELBASE : 1627 mm (64 in.)





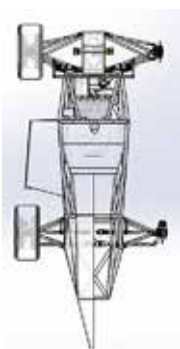
Mesa Motorsports will compete for the second time at the 2016 Formula SAE competition in Michigan. Developing our second car, based on our 2015 Design Review critique, had lead to many substantial improvements. This year's focus is to participate in our first dynamic events, and to gain the practical knowledge needed to design a faster, lighter, and more efficient car for years to come.



Car 91 marks the 25th vehicle produced by GT Motorsports since the team's founding in 1987. We strive to produce consumer oriented vehicles that are fast, comfortable, reliable, and affordable. GT Motorsports takes the vision of Formula SAE to heart; our cars are 100% student designed, and our team members manufacture over 90% of our components in house. Each new car is built from the ground-up every year; no parts are recycled from previous years.

This year's design places a heavy emphasis on aerodynamic performance while maintaining a lightweight and robust overall package. Car 91's chassis features a stressed engine and structural composite panels, which allow for a 20% reduction in weight while nearly doubling the torsional stiffness.

GT Motorsports would like to thank the George W. Woodruff School of Mechanical Engineering and the Student Government Association for their continual support, as well as all of our other sponsors and contributors featured at gtms.gatech.edu/sponsors.



BRAKE : Wilwood GP200 Calipers,
BSCD : 67x42.5 4cyl. 599cc
COOLING : Side mount radiator, oil cooler
DRIVE : Drexler chain drive LSD
ELECTRONICS : OEM ECM with DynoJet ancillaries
ENGINE : Honda CBR600RR
FR/RR TRACK : 1283mm/1219mm (50.5in/48in)
FRAME : Steel Spaceframe
FUEL SYSTEM : Multi-port fuel injection
FUEL TYPE : 91 OCT
MATERIAL :
MPD : 52kW at 10,500
MPT : 54 Nm at 10,000
OLWH : 3054x1460x1028mm (120x57.5x40.5in)
SUSPENSION : SLA Pullrod
TIRE : 20.5x13x7 Hoosier RB25
UNIQUE :
WEIGHT : 620 lb
WHEELBASE : 1727mm/68in



BRAKE : Student designed monobloc caliper-4 piston front, 2 piston rear. Bosch ABS M4
BSCD : 67mm/42mm/4cyl/599cc
COOLING : Rear-mounted aluminum radiator with thermostatically-controlled fan
DRIVE : 520 chain with limited slip differential
ELECTRONICS : Bosch MS6.2 ECU, MoTeC ADL Dash, Student-Designed PDM, Magic Smoke
ENGINE : 2009 Honda CBR600RR
FR/RR TRACK : 52in / 52in
FRAME : 4130 Space Frame with Structural CFRP Panels
FUEL SYSTEM : EFI, external fuel pump
FUEL TYPE : Hopes and Dreams
MATERIAL : Blood, Sweat, Tears, Carbon Fiber
MPD : 86hp @ 11500rpm
MPT : 48ft-lbs @ 9000rpm
OLWH : 122in long / 59.5in wide / 47in high
SUSPENSION : Double unequal length A-arms. Pull-rod front, push-rod rear
TIRE : Hoosier 6.0/18.0-10 LCO
UNIQUE : CFRP 1-piece wheel shell, Multifunction CFRP steering wheel, George P Burdell
WEIGHT : 575lbs w/ driver
WHEELBASE : 61in



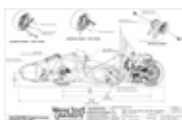
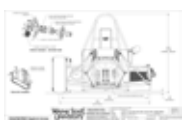


The Wayne State University Formula SAE team is entering its 14th competition season with its 10th iteration vehicle, Road Warrior X (RWX). The design of RWX was influenced by the success of our previous vehicle, RW9, which performed better than any other in our team's history. Our goals for the vehicle included validating changes made from RW9 to RWX, decreasing the overall weight of the vehicle, and optimizing the integration of powertrain and chassis components.

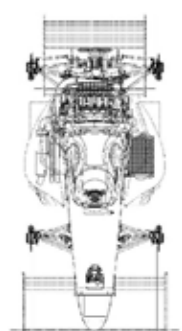
We would like to thank our sponsors for their support and generosity. Their continued assistance has helped us grow our program and produce the best road warrior yet.



The HOXI aka "Ananya" is the eleventh car of HAWKS Racing. Due to averagely skilled driver on challenging tracks and conditions, we want to ensure a car with trusted drivability through highly developed ergonomics, safety standards and precise feedback - dynamic performance through multi adjustable setups of suspension, engine and aerodynamics and high lateral accelerations were all implemented in a functional design combining chassis and aerodynamic in an integral construction, easy maintenance and reliability. This report displays our design properties and their particular details that were developed to achieve our goals.



BRAKE : Brembo 32 mm Caliper; Front Pivoting MC's; Cast Iron Rotors
BSCD : 67 / 42.5 / 4 / 599cc
COOLING : Electric WP / Side mounted dual pass radiator / 560 cfm fan
DRIVE : 520 X-ring chain; MK@ TRE Quaife ATB
ELECTRONICS : ECM controlled switches / Relay control of fused auxiliary components
ENGINE : 2014 Honda CBR600RR
FR/RR TRACK : 1270mm/1219mm (50in/48in)
FRAME : 4130 Tubular Steel Spaceframe
FUEL SYSTEM : Keihin 12-hole injectors / port injection / fully sequential
FUEL TYPE : 100 Octane
MATERIAL : 4130 Frame, Aluminum, Carbon Fiber, Steel, Rapid Prototype Intake
MPD : 11500
MPT : 9000
OLWH : 2723/1505/1123 (107.2/59.3/44.2)
SUSPENSION : Double Wishbone SLA ; Pushrod actuated ; F
TIRE : Hoosier R25B: Front 20.5x6-13 , Rear 20x7.5-13
UNIQUE : Made in the motor city
WEIGHT : 620
WHEELBASE : 1651mm/65in



BRAKE : Floating, hub mounted, 250mm dia. vented, 5mm(front)/3mm(rear) thick
BSCD : 66mm/43,8mm/4/599,4cc
COOLING : self designed side mounted, electric water pump, 2 self designed fans
DRIVE : DID Racing Chain 530ERS2
ELECTRONICS : self designed power hubs, current measurement and digital fuses
ENGINE : 2004 Kawasaki ZX636-B2 (Ninja ZX-6R)
FR/RR TRACK : 1200mm/1200mm
FRAME : full body CFRP monocoque and CFRP rear support frame
FUEL SYSTEM : self designed multi-point sequential fuel injection
FUEL TYPE : gasoline
MATERIAL : E201 prepreg, HRH10 aramide honeycomb, IG-F foam
MPD : 10800
MPT : 9500
OLWH : 3066mm/1404mm/1178mm
SUSPENSION : double unequal length A-Arm with pull/push rod actuated
TIRE : 20 x 7.0 - R13
UNIQUE :
WEIGHT : 579,82
WHEELBASE : 1635mm



The Florida Tech Formula SAE team is comprised of 20 undergraduate students who are determined to produce a successful, cutting edge vehicle in a timely and professional manner. The FP-16 is the third evolution of our current concept and features a modular design centered around a 600cc Honda CBR and 20.5x7.0-13 Hoosier tires. This year we focused on reliability and weight reduction in order to produce a car that performs aggressively across all dynamic events.

We are pleased to announce that The Scott Center for Autism Treatment and Autism Speaks has elected to partner with Florida Tech Formula SAE so that we may produce a Formula SAE vehicle dedicated to raising awareness. The team continues to build upon the strong foundation set in 2013 and pursue the spirit of SAE. We would like to extend a special thank you to our friends, families, advisors, sponsors, Florida Tech, and Novel Engineering for their unwavering support and allowing us the opportunity to represent them at competition.



BRAKE : Floating 9" Rotors, Wilwood Master Cylinders
BSCD : 67mm / 42.5mm / 4 cylinders / 599cc
COOLING : Side Mounted Radiator
DRIVE : 520 pitch chain driven via stock gearbox
ELECTRONICS : Motec M400
ENGINE : CBR 600rr
FR/RR TRACK : 1270mm/1250mm
FRAME : Steel Space Frame
FUEL SYSTEM : Denso port sequential injection system
FUEL TYPE : 93 Octane
MATERIAL : 4130 Steel
MPD : 12,500
MPT : 8,100
OLWH : 2741mm, 1460mm, 1192mm
SUSPENSION : Double unequal A-Arm, push-rod actuated spring and damper
TIRE : 20.5x7.0-13, R25B Hoosie
UNIQUE : Custom 3D printed Intake, Carbon Fiber Suspension Components
WEIGHT : 650lbs
WHEELBASE : 1580mm



Knickerbocker Motorsports is introducing an entirely new platform, KMR-16, outfitted with 10" tires to reduce moment of inertia, a CBR600RR engine for optimal power, and an electro-pneumatic shift-clutch mechanism.



BRAKE : AP Racing Front Calipers, Brembo Rear Calipers, 4 gray cast iron disk rotors
BSCD : 67 mm/42.5 mm/4 cylinders/599 cc
COOLING : Side Mounted Radiator
DRIVE : Chain Driven Quaife Differential
ELECTRONICS : Motec M84
ENGINE : Honda CBR600RR
FR/RR TRACK : 1220 mm/1168 mm
FRAME : 4130 Steel Space Frame
FUEL SYSTEM : Fully sequential E.F.I
FUEL TYPE : 93 Octane Gasoline
MATERIAL : 4130 Steel Frame and Carbon Fiber Body
MPD : 10500
MPT : 9500
OLWH : 2616 mm/1400 mm/1130 mm
SUSPENSION : Unequal length non-parallel double wishbone suspension
TIRE : Hoosier 18.0x7.5-10 R25B
UNIQUE : Made with Love
WEIGHT : 276 kg
WHEELBASE : 1550 mm

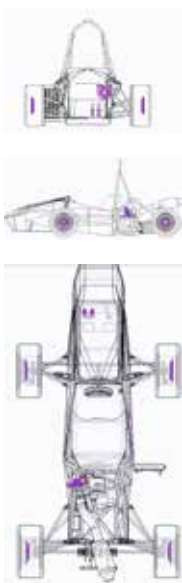




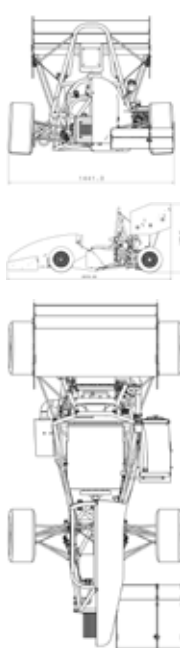
The 2016 Minnesota State FSAE teams' car was designed to outperform our previous year's car and reduce the weight by ten percent. By reducing the weight allowed the car to accelerate quicker in every direction. To help reduce the overall weight of the car the team decided not to use any aero on the car. Some areas were redesigned such as the frame while other aspects were kept the same such as the suspension. The new frame design used the engine as a semi-rigid member to help with torsional stiffness while reducing the weight. The roll hoop was angled back while the dash hoop was angled forward to allow for larger and more comfortable cockpit. Keeping most of the suspension points the same allowed the team to refine the tire data. The team used the same engine configuration as last year while revising the intake and exhaust systems. The engine is a single cylinder 2015 Yamaha YFZ450R running on E85 with a Garrett MGT-1238 Turbocharger.



Embry-Riddle's 2015 Formula SAE car (ER-02) is the school's second FSAE car. In order to prevent vehicle failures and promote performance, an aggressive design and build schedule was employed. The overall design philosophy of this car was to reduce overall weight at the component level while maintaining stiffness and strength. This is also the first car to employ an aero pack as well as engine modifications. Every part of this car is tailored to the weekend auto-crosser. The team's design freeze was November 9th which allowed us to build over December and January to allow us to reach our deadlines. ER-02 began testing on February 24th is roughly 55 lbf lighter than ER-01, turns 0.5 g harder, and has a more refined intake system.



BRAKE : Four wheel disk brakes, Floating rotors
BSCD : 95mm/63.5mm/Single Cylinder/450cc
COOLING : Single pass 10"x16" aluminum core, 8" fan
DRIVE : Chain Drive, Drexler Differential
ELECTRONICS : MoTec M130
ENGINE : Yamaha YFZ450R
FR/RR TRACK : 47.5"/46.5"
FRAME : 1020 DOM Tube Frame
FUEL SYSTEM : turbine pump in tank
FUEL TYPE : E85
MATERIAL :
MPD : 65 HP @ 8800 RPM
MPT : 40 Lb-Ft @ 7300 RPM
OLWH : 117.6"/57"/47"
SUSPENSION : F/R Unequal length A-Arms with push-rods in front and rear
TIRE : 18.0"x6.0" LCO
UNIQUE :
WEIGHT : 410 lbs
WHEELBASE : 62 Inches



BRAKE : Dual Hydraulic Systems
BSCD : 67/42.5/4/599
COOLING : Single Water Radiator
DRIVE : Chain drive to LSD
ELECTRONICS : Motec SDL3 and PE3
ENGINE : CBR 600 RR
FR/RR TRACK : 1219/48
FRAME : Steel Spaceframe
FUEL SYSTEM : Common Rail w/ Return
FUEL TYPE : 93 Octane
MATERIAL : 7075, 4130, and Carbon
MPD : 11,500
MPT : 8000
OLWH : 2876/1441/1193
SUSPENSION : Unequal length double a arm
TIRE : 6/18-10 LCO
UNIQUE : Aero Pack
WEIGHT : 590
WHEELBASE : 1549/61

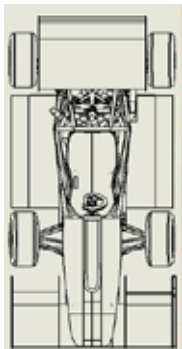
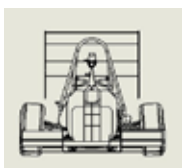




The 2016 FSAE racecar for Duke University Motorsports represents a critical iteration of our 2015 competition design, bringing the vehicle closer to its full potential. A continued focus on weight reduction and systematic subsystem refinement complement the major design change of developing a full, three-piece aero package to build on the performance seen during the 2015 competition. Through theoretical modeling, CFD analysis, wind tunnel verification, lap simulations, and finally on-vehicle testing and validation, it was determined that including a full aerodynamics package for the new design is the best use of resources to improve the vehicle's overall performance. In addition to having built a very robust racecar with a steel space-frame and a four cylinder engine, a number of design enhancements for the 2016 vehicle have been developed to create a strong overall design focused on improvements within every subgroup.



The CFR2016 is an iteration of the CFR2015, with the necessary modifications. The space frame has proven to be reliable, and the switch from carbon fiber to fiberglass sandwich panels was necessary to remove cost from the car. The CFR2016 is SVSU's third car to be powered by a Drexler LSD and a Yamaha R6 engine. A motto that has stood the test of time at CFR is "Collect data while never stopping the search for speed". This allows us to make decisions based on testing and speed, and also makes us more competitive at FSAE Michigan every year.



BRAKE : AP Racing CP227/6-2SO, 4/2 Piston, 1" Diameter Calipers
BSCD : 4-cylinder 600,000 cubic-millimeters
COOLING : Single rear mounted radiator w/ automatic electric fan activation
DRIVE : 520 Motorcycle Chainw/ Taylor Race FSAE TRE MK2 Differential
ELECTRONICS : PE3 ECU w/ Motec C125 DAQ
ENGINE : 2001 Honda CBR 600 F4i
FR/RR TRACK : 46" FF/RR
FRAME : 4130 Steel Space Frame
FUEL SYSTEM : Naturally Aspirated
FUEL TYPE : 100 Octane
MATERIAL : Carbon Fiber Nosecone
MPD : 9500
MPT : 8000
OLWH : 78"x 54" x 43"
SUSPENSION : Double unequal Length A-Arm, Pullrod, Actuated Spring w/ Ohlins TTX25 MkII
TIRE : 18 x 6.0 - 10 LCO Hoosier
UNIQUE :
WEIGHT : 600
WHEELBASE : 60"



BRAKE : 3 AP Racing 4 Piston Calipers Tilton Master Cylinders
BSCD : 600 cc 4 Cylinder
COOLING : Radiator Water Cooled
DRIVE : Chain
ELECTRONICS : Wiring Harness
ENGINE : 2008 Yamaha R6
FR/RR TRACK : 44"/42"
FRAME : 4130 Chromoly Tube w/fiberglass inlaid panels
FUEL SYSTEM : Multi-Point Pickup
FUEL TYPE : 100 Octane
MATERIAL :
MPD : 86 hp (13,000)
MPT : 45 ft*lbs (9,000)
OLWH : 102", 53", 43"
SUSPENSION : Non-Parallel Unequal Length A-Arms Push/Pull Rod Actuation
TIRE : 10" Hoosier LCO
UNIQUE :
WEIGHT : 600
WHEELBASE : 60"

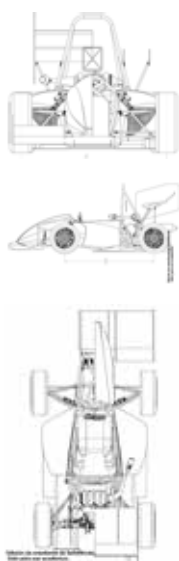




At the time, Venezuela has the worst economic and social crisis in a lifetime. Therefore, we took decisions considering every possible obstacle. Against all odds, we have faced and solved all type of challenges and problems. Moreover, we have developed new alternatives to build a high performance prototype.

Based on previous years' experience and to keep improving our results, this year the F-SAE USB Team has set to design and build a Functional, Achievable, Simple, Tested, Economic and Reliable (F.A.S.T.E.R) prototype. We want to keep going FASTER to continue being one of the best Latin American Team.

We would like to thank all of our sponsors and advisory teachers for believing in us and supporting us because without them this project wouldn't be possible.

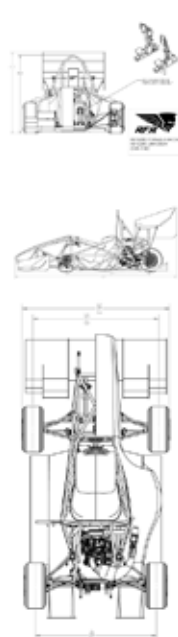


BRAKE : Outboard, Floating, gray cast iron, hub mounted, 215 mm OD. Drilled
BSCD : 67 mm/42.5 mm/4 cyl/599 cc
COOLING : One single pass, aluminum radiators with inlet/outlet duct and no cooling
DRIVE : Drexler Differential
ELECTRONICS : ECU PE3
ENGINE : Honda CBR600 F4i cylinders
FR/RR TRACK : 1244 mm / 1194 mm
FRAME : Tubular Frame
FUEL SYSTEM : Electronic fuel injection
FUEL TYPE : 100 Octane
MATERIAL : 4130 Round Steel Tubing
MPD : 11.500 rpm
MPT : 7.800 rpm
OLWH : 2987 mm, 1463 mm, 1200 mm
SUSPENSION : Double Unequal length A-Arms. Push rod actuated
TIRE : Front 7.0 in and rear 7.5 in
UNIQUE : Brakes calipers and rotors are design and built by the team
WEIGHT : 290 Kg w/driver
WHEELBASE : 1550 mm



This year's goals were not only to achieve a better performing vehicle, but also a better performing team. After careful consideration of previous years' designs, it was decided that a major redesign of the car was needed. It was necessary to improve engineering fundamentals through a refined design process. This process included thorough documentation, communication, and organization. Data driven decisions were made through the implementation of DFMEA's, stricter analysis requirements, and a more detail focused modeling. Aggressive but achievable goals such as keeping the weight under 400lb, lateral cornering capability of 1.5g, and tighter packaging were set. Individual systems of the RFR16 worked synergistically to accomplish these goals.

We would like to thank all of our sponsors for their constant support and generosity and look forward to representing them with a top performance.



BRAKE : Dual piston Wilwood PS1 calipers , custom cast iron scalloped rotors
BSCD : 95 mm bore/ 63.4 mm stroke/ 1-cyl/ 449 cc
COOLING : Side mounted single core single pass down-flow radiator, 342 cfm fan
DRIVE : 520 Chain Drive
ELECTRONICS : DTA Fast S80 ECU, custom built data-acquisition system
ENGINE : Yamaha YFZ450r
FR/RR TRACK : 1270 mm front/ 1219.2 mm rear
FRAME : Steel SpaceFrame with CFRP Floor Panels
FUEL SYSTEM : Electronic port fuel injection
FUEL TYPE : 93 Octane
MATERIAL : 4130N Chromoly Steel
MPD : 9500 rpm
MPT : 8250 rpm
OLWH : 3017 x 1457 x 1198mm
SUSPENSION : Double unequal length A-Arm, push rod rear/pull rod front
TIRE : 18" x 8"-10" LCO Hoosier
UNIQUE : Nylon 3-D printed intake, carbon fiber steering rack, center-lock wheels
WEIGHT : 240 kg / 539 lb with driver
WHEELBASE : 1574.8 mm

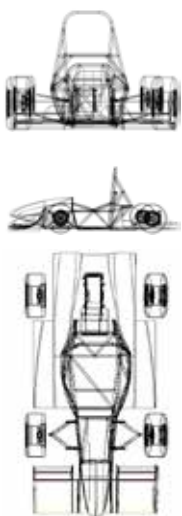


Southern Illinois Univ - Edwardville Cougar Racing



This year Cougar Racing started from scratch building a new baseline car. Our goals this year were build a lightweight, simplistic car with easy access to parts available in the racing market.

We would like to give a huge thank you to our sponsors this year big and small. We look forward to continuing our partnership with you in the years to come.



BRAKE : Wilwood front and rear calipers/ steel rotors
BSCD : 67 mm, 42.5 mm, 4 Cylinders, 599cc
COOLING : Dual pass lay down radiator
DRIVE : Chain Drive, MK2 differential
ELECTRONICS : Haltech ECU with IQ3 display and logger dash
ENGINE : Yamaha R6
FR/RR TRACK : 1270 mm (50 in)/ 1270 mm (50 in)
FRAME : Tubular space frame
FUEL SYSTEM : Sequential fuel injection
FUEL TYPE : 100 octane
MATERIAL : 4130, Carbon Fiber, Fiberglass, plastic
MPD : 87 hp (11,500)
MPT : 47 ft-lb (8,500)
OLWH : (2685, 1498, 1168) mm/ (105.7, 59, 46) in
SUSPENSION : double unequal length A-arms push rod actuated coilovers
TIRE : 19.5x7.5-10 R25B Hoosier
UNIQUE : Maiden Voyage with EFI
WEIGHT : 550 lb
WHEELBASE : 1651 mm / 65 in

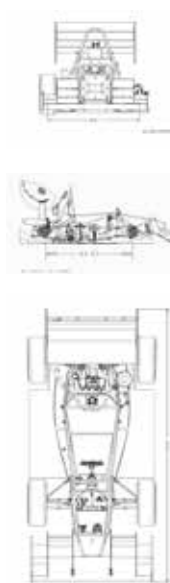


Univ of Illinois - Urbana Champaign Illini Motorsports



The Illini Motorsports 2016 competition entry has been designed using points analysis-based lap simulation with an enhanced focus on reliability. Key design changes include a new Yamaha R6 powertrain, a new paddle-shifting system, and updates to our custom electronics package.

We would like to thank our friends, families and sponsors for their continued support.

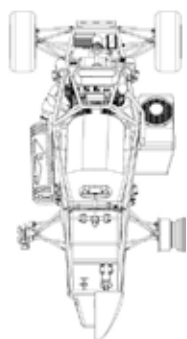
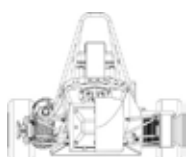


BRAKE : AP Racing 4-Piston Front, 2-Piston Rear
BSCD : 67mm/42.5mm/4/599cc
COOLING : Vertically mounted single core double pass radiator, 1328 com fan
DRIVE : Chain Drive, Wavetrac LSD
ELECTRONICS : Motec M400 and student designed data acquisition system
ENGINE : Yamaha YZF-R6
FR/RR TRACK : 49in front, 49in rear
FRAME : 4130 Steel Space Frame
FUEL SYSTEM : Stock Yamaha
FUEL TYPE : 93 Octane
MATERIAL : 4130 Chromoly Steel
MPD : 11,500
MPT : 10,000
OLWH : L: 3109mm/W: 1468m/ H: 1124mm
SUSPENSION : Double unequal length A-arms, Ohlins TTX25 Dampers
TIRE : 20.5x7x13 Hoosier R25B
UNIQUE : Custom airfoils, CFRP string wheel, PDM, Electronic Paddle-Shifting
WEIGHT : 610
WHEELBASE : 64in





This marks the eighth vehicle produced by UConn Formula SAE since reforming the team in 2007. With two top 20 finishes in 2014 and 2015 our team is hoping to break top 15 this year. The focus of this year's car has been modularity and manufacturing refinement. The frame is a tubular steel space frame made from 4130 chromoly with infused carbon fiber stressed panels and body for increased torsional rigidity and weight reduction. A 2003 Suzuki GSX-R600 underwent a rebuild including a modified 13.3:1 compression ratio, slipper clutch, removal of first and sixth gear, and a back-cut, cryo-treated second gear. The exhaust is constructed out of steel in a 4-2-1 configuration with ceramic coating both inside and out. A custom resonator is used for noise. Our differential housing, diff mount, oil pan, steering rack, uprights, and gas pedal are all cast magnesium. Cast aluminum was used for the hub/spindles, as well as rockers. The body is unpainted resin infused carbon kevlar panels. Traction control and launch control have been implemented with EGT protection. The car is shifted with a pneumatic setup that allows for full throttle shifting. Auto upshift is optional as well



BRAKE : Tilton 77 Series MC, balance bar, Wilwood PS1 calipers

BSCD : 67 mm / 42.5 mm / 4 Cylinder / 599 cc

COOLING : Side-mounted ducted single core radiator with fan

DRIVE : Chain drive, Salisbury differential, modified OEM gearbox

ELECTRONICS : Syvecs S8 ECU with data logging, AIM Evo3

ENGINE : Suzuki GSX-R600 (K1-K3), Normally aspirated

FR/RR TRACK : 1219 mm/48 in; 1168 mm/46 in

FRAME : Steel space frame (4130, normalized) with CFRP stressed panels

FUEL SYSTEM : Sequential port injection, Alpha-N calibration

FUEL TYPE : 93 Octane

MATERIAL : Magnesium, 4130, Carbon-Kevlar

MPD : 10100

MPT : 9200

OLWH : 2768 mm/109 in, 1435 mm/56.5 in, 1163 mm/45.8 in

SUSPENSION : Double unequal-length non-parallel a-arms, F/R pullrods, adj. anti-roll bars

TIRE : 18x6.0-10 Hoosier R25-B compound

UNIQUE : Cast magnesium uprights, differential housing; CFRP stressed panels

WEIGHT : 579 lb/263 kg

WHEELBASE : 1549 mm/61 in



For 2016, the team has developed a steel tube chassis that will be used in conjunction with bonded carbon fiber panels. This type of chassis construction combines the best aspects of both monocoque and steel tube construction. It is comparable to a monocoque in lightness and strength, but is much easier to manufacture and allows for easy access to and packaging of other components.



BRAKE : 3 Floating Rotor w/Wilwood Calipers

BSCD : 95.0mm/63.4mm/Single/450cc

COOLING : Dual Mounted

DRIVE : Chain Drive

ELECTRONICS : Microsquirt ECU, Custom Dash

ENGINE : YFZ 450r

FR/RR TRACK : 1268/1253(mm)

FRAME : 4130 with Carbon Torsion Tubes

FUEL SYSTEM : Sequential

FUEL TYPE : 93 Octopus

MATERIAL : 4130 with Uni-Direction PrePreg

MPD : 55hp 10,500 rpm

MPT : 45 ft lbs 7,000 rpm

OLWH : 2532,1450,940

SUSPENSION : Unequal double wishbone nonparallel

TIRE : 18x6 Hoosier LCO

UNIQUE : Carbon Fiber A-Arms

WEIGHT : 500lbs

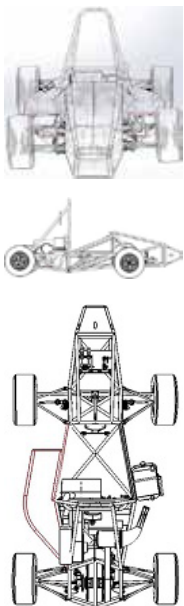
WHEELBASE : 1540mm



Bulldog Racing is a small and young team in the FSAE competition. This year we have completed a full redesign of the previous UMD car and produced the BR16, a lighter, quicker, and more agile car than UMD has had in the past.

The team began driving the car in early March which has allowed time to test all aspects of the car. We hope with ample time behind the wheel we can complete each event at competition and set a new benchmark in the standings for UMD.

We are hoping our current car design will be a good base model and with rigorous testing & tuning we can slowly improve the car and produce a highly competitive vehicle in future years.



BRAKE : Wilwood ps1 calipers w/ custom steel rotors
BSCD : 99mm/73.6mm/1/570cc
COOLING : Water Cooled
DRIVE : CVT to Final Chain Drive
ELECTRONICS : Haltech ECU
ENGINE : Polaris 570cc
FR/RR TRACK :
FRAME : Steel Tubular
FUEL SYSTEM : Port Injection
FUEL TYPE : 93 Octane
MATERIAL : Steel chassis with Carbon Fiber Body
MPD : 5500 rpm
MPT : 7000 rpm
OLWH : 108" x 57" x 46.5"
SUSPENSION : Double Wishbone Pullrod
TIRE : Hoosier 18-6.0-10 R25B
UNIQUE : Custom 3d printed carbon filled nylon air intake
WEIGHT : 435lbs
WHEELBASE : 64"



The University of Hartford's 2016 entry is the first iteration of a completely redesigned vehicle. It features a redesigned frame, suspension system, and user-tailored ergonomics.

We would like to make a special thank you to all of the alumni whose shoulders we stood on to achieve everything we have been able to this year. We would also like to thank the fantastic sponsors who go out of their way to work with us.



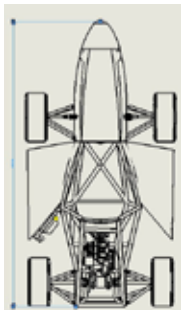
BRAKE : 4130 steel rotors, floating calipers, Kevlar Carbon brake pads
BSCD : Bore: 98mm/Stroke: 68mm/Single-cylinder/449cc
COOLING : Rear mounted radiator
DRIVE : Torson Limited Slip Diff, 520 roller chain
ELECTRONICS : Performance Electronics ECU-3
ENGINE : Yamaha YFZ450r
FR/RR TRACK : Front Track: 1257.4mm/Rear Track: 1282.7mm
FRAME : Tubular space frame
FUEL SYSTEM : Edge Fuel Injection System
FUEL TYPE : 100 Octane
MATERIAL : 4130 Chromoly Steel
MPD : 9000 rpm
MPT : 7500 rpm
OLWH : Length: 2286 mm/Width: 1282.7 mm/Height: 1104.8 mm
SUSPENSION : Ohlins TTX25's, unequal a-arms, pushrod actuated
TIRE : Hoosier 18.0x6.0, R25-A
UNIQUE :
WEIGHT : 500lbs
WHEELBASE : 1587.5 mm/61.5inches



112 Universidad Autonoma Estado Mexico UAEMEX RACING



The UAEMEX RACING TEAM has competed in the Formula SAE series since 2006, this is the eighth team in competition. The vehicle design was focused on reliability and serviceability thinking on a competitive market product, making a balance between cost, manufacture and people preferences. Each year the team objective is to create continuous improvement gaining experience and transmit to future generations important learned design aspects.



BRAKE : Front Nissin Dual Piston and Rear Wilwood PS-1 Calipers
BSCD : 92mm Bore / 62mm Stroke / 1 Cylinder 7 439 cc
COOLING : Water Cooled Single Radiator
DRIVE : Chain Drive 520MXV/DAIDO
ELECTRONICS : Performance Electronics PE-ECU-3
ENGINE : YAMAHA YFZ 450
FR/RR TRACK : 1220mm / 1170mm
FRAME : Tubular Space Frame
FUEL SYSTEM : Single injector and Bosch Fuel Pump
FUEL TYPE : 93 Octane Gasoline
MATERIAL : 4130 Steel
MPD : 39Hp @ 6500rpm
MPT : 63.1 Nm @ 6440rpm
OLWH : 2500mm / 1400mm / 1250mm
SUSPENSION : Double Unequal Length A-arm
TIRE : 18x6-10 R25B Hoosier
UNIQUE : Fuel Injection Student Design
WEIGHT : 580 lb
WHEELBASE : 1560mm

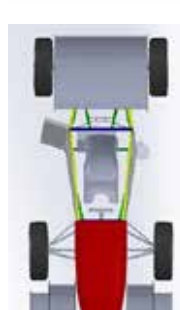


113 Univ of Guelph Gryphon RAcIng



2016 has been an exciting year for Gryphon Racing. The year started off strong with the largest number of members since the team's creation in 2003. Many new ideas are being incorporated and are resulting in Gryphon Racing's most improved car yet. For the first time ever we are producing a full carbon fiber aero car. The intake, exhaust and shifting systems have all be completely redesigned for optimal torque peaks. The Exhaust has changed from a 4-1 to an optimized 4-2-1 header set-up flowing into a fully customized carbon fiber muffler and the intake has been redesigned and rotated 90° in order to incorporate the rear wing. For the first time in many years, pneumatic paddle shifters are being used as opposed to a manual shifter. As always, Gryphon Racing runs a 2011 GSX-R 600, mounted longitudinally, allowing the elimination of a drive chain.

2016 has also been a sad year for Gryphon Racing. On March 3rd our team captain, Eric, died suddenly in a vehicle accident, this year's car is dedicated to Eric's love of racing.



BRAKE : Floating Rotor, Tokico 4 piston front, Wilwood PS-1 Rear
BSCD : 67.0 mm / 42.5mm / 4 Cylinder / 599.00 cc
COOLING : Single Side-Mounted radiator and fan
DRIVE : Shaft drive into limited-slip differential
ELECTRONICS : PE3 ECU
ENGINE : 2011 GSX-R 600 with dry sump
FR/RR TRACK : 1280mm/ 1210mm
FRAME : Tube Steel Space Frame, Stressed Engine
FUEL SYSTEM : EFI
FUEL TYPE : 93 Octane
MATERIAL : 1018 Mild Steel
MPD : 8500
MPT : 7500
OLWH :
SUSPENSION : Double Unequal Length A arm, pull rod
TIRE : 20.5x7 - 13 R25A
UNIQUE : Longitudinal Engine, Shaft driven
WEIGHT : 650 lbs
WHEELBASE : 1550mm





As an established small team, the design philosophy remained the same as the last few years. We promoted the understanding of the basic concepts instead of designing complex parts. In our reality, major's improvements come from finishing formula Sae students who accomplishing graduating project to develop specific system on our car. Last year, there was two major project, but only one this year. So this is why we doesn't reinvent the wheel each years and focus on transmitting knowledge to new students.

The major improvement of this year is the implantation of a turbocharged system on the engine. This project will permit to lower the transmission ratio, remove a transmission shaft, 2 sprockets, 2 bearings and to downsize the entire rear of the vehicle. Another positive consequence is the reduction of the noise and a better weight distribution. The turbocharger system itself add weight, but all other removed components we have just talk will compensate.

We also tried to improve all other project with financial and human resource we have. So the frame, the powertrain and the suspension has been studied and improved at different level to develop a low cost prototype.



BRAKE : Floating, hub mounted, Wilwood master cylinder

BSCD : 77mm/53.6mm/2cylinders/499cc

COOLING : 2 side radiators

DRIVE : CVT

ELECTRONICS : AEM EMS-4

ENGINE : Yamaha genesis 80fi 500cc turbocharged

FR/RR TRACK : 1198mm/1165mm

FRAME : Space steel tubing

FUEL SYSTEM : Baseline fuel system

FUEL TYPE : 260GT

MATERIAL : Yes, a lot!

MPD : 11500

MPT : 8000

OLWH : 2700mm/1414mm/1196mm

SUSPENSION : Kaz technologies gaz damper

TIRE : R25B

UNIQUE : Turbocharged engine with CVT

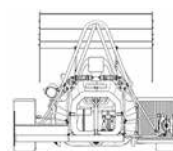
WEIGHT : 570

WHEELBASE : 1550mm



Cornell Racing is competing with ARG16 in Formula Michigan 2016. Building off of ARG15 and other Cornell FSAE prototypes, ARG16 was designed to be lightweight, well-packaged, and easy to manufacture.

ARG16 returns to a full carbon fiber monocoque for weight reduction and increased stiffness. A removable frame member allows for easy engine removal while serving as a mounting point for suspension links and anti-roll bar mounts and maintaining chassis rigidity. A turbo-charged Honda CBR600 provides high power over a wide RPM range and is supported by a dry-sump lubrication system and MoTeC M400 ECU. A paddle-actuated pneumatic shift system and improvements in the seat and pedal design increase drivability on ARG16. Front and rear wings increase high speed stability and cornering ability. Custom wheel centers, an aluminum sprocket, a 2-stage oil pump, and improved harness routing are just a few of the features which contribute to further weight savings. With a focused design and a long testing season, ARG16 aims to finish in the top 10 at MIS.



BRAKE : Floating, cast iron rotors with 2-piston calipers

BSCD : 67mm / 42.5mm / 4cyl / 599cc

COOLING : Ducted sidepod-mounted radiator with thermostatic controlled electric fan

DRIVE : Chain

ELECTRONICS : MoTeC M400 ECU

ENGINE : Honda CBR600RR

FR/RR TRACK : 1213mm (48in) / 1194mm (47in)

FRAME : Carbon fiber monocoque, 4130 frame member

FUEL SYSTEM : Sequential port injection controlled by M400 with 3D map

FUEL TYPE : E85

MATERIAL :

MPD : 9000

MPT : 7000

OLWH : 2903mm (114in) / 1382mm (54.5in) / 1130mm (44.5in)

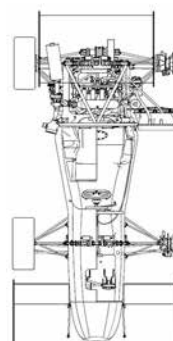
SUSPENSION : Double unequal-length a-arms, pushrod actuated spring/damper, adj anti-roll

TIRE : 18.0 X 6.0-10 R25B Hoosier

UNIQUE : Yes

WEIGHT : 580 lbs

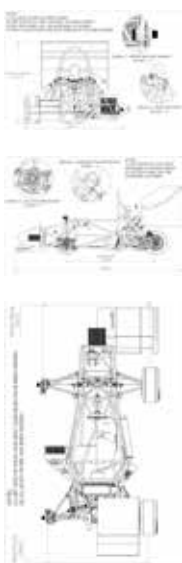
WHEELBASE : 1575mm (62in)



116 Univ of Toledo Rocket Motorsports



This year's car UTR-22, was built around simplicity and reliability while also taking on some new features. Utilizing tire consortium data as a starting point, UTR-22 features a rigid tubular chassis, CBR600 F4i, and Ohlins shocks backed up with extensive durability testing. Serviceability and weight reduction were also considered with every component designed. With a large amount of time dedicated to testing and refining we hope to have an all-around reliable and fine-tuned car for competition.



BRAKE : Full Floating Rotors w/ Wilwood Calipers
BSCD : 67mm/42.5mm/4/599cc
COOLING : Left side mounted, single crossflow heat exchanger with rear duct
DRIVE : Chain
ELECTRONICS : Haltech Platinum Sport 1000, Race Technology DL1, and DEWESoft Minitaur
ENGINE : Honda CBR F4i
FR/RR TRACK : 1574.8mm/1257.3mm
FRAME : 4130 Steel Spaceframe
FUEL SYSTEM : Sequential Fuel Injection
FUEL TYPE : E-85
MATERIAL : 4130 Steel
MPD : 9,000
MPT : 8,000
OLWH : 2933.7mm, 1435.1mm, 1215.15mm
SUSPENSION : Non-Parallel Unequal Length Anti-Dive A-Arm (F)
TIRE : 7.0/16.0-10.0 Avon
UNIQUE : Variable Volume Plenum, Driver Adjustable Anti-roll Bar
WEIGHT : 580 lbs
WHEELBASE : 1574.8mm

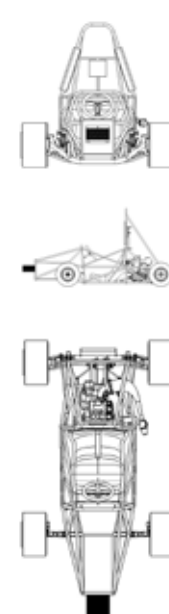


117 Univ of Windsor Lancer Motorsports FSAE



The design approach for the 2016 University of Windsor FSAE vehicle was that of innovation and low weight. Transitioning from the 4-cylinder 600cc engine of year's past to a small, lightweight single cylinder has shaved pressure pounds from the overall weight. This year's suspension has seen a dramatic overhaul from any previous formula car the

University of Windsor has ever designed. It utilizes a four link beam axle with a single lower A-arm front suspension, and a similar DeDion axle rear suspension. The beam axle configuration allows the packaging of 8 in wheels and SD44 American Racer tires. Although the beam suspension will be heavier per axle than an independent setup, the use of 8 in wheels and accompanying tires removes approximately 32 lbs overall. Not only is this weight savings unsprung, improving suspension performance, but it will also reduce the rotating mass moment of inertia of the wheels. The beam setup also allows for a lower centre of gravity and zero camber change or scrub in pitch and roll motions. The new design strategy should produce a reliable and competitive vehicle package.



BRAKE : Four Wheel Semi-Floating Disc with Dual Opposing Piston Calipers
BSCD : 96mm/62mm/1/450cc
COOLING : Stock pump with aftermarket fan and radiator
DRIVE : 5-speed manual sequential transmission, chain drive
ELECTRONICS : Performance Electronics ECU with digital dash output
ENGINE : Honda TRX450R
FR/RR TRACK : 45.5 in front, 44.4 in rear
FRAME : Tubular spaceframe
FUEL SYSTEM : Electronic fuel injection
FUEL TYPE : Gasoline, AKI 100
MATERIAL :
MPD : 7500
MPT : 6500
OLWH : 98 in L, 53 in W
SUSPENSION : Four link with lower A-arm front and rear
TIRE : 15-8x8 AR SD44
UNIQUE :
WEIGHT : 535 lbs
WHEELBASE : 61.25 in

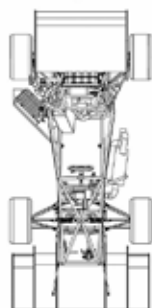




The design of the 2016 car was based around the philosophy of prioritizing project management, understanding performance gains, and overall vehicle integration. Vehicle simulations were performed to evaluate various design concepts and these results were balanced against many other factors, such as cost and reliability, to select the final vehicle concept. The suspension system was designed to not only to efficiently utilize the tires but also to enhance serviceability and packaging in other areas of the car. New wing elements were used on the front wing and it was lowered to take advantage of ground effect to increase downforce generation. Additional engine tuning was performed to improve reliability and a variable length intake was developed to improve volumetric efficiency.



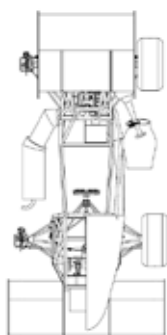
BRAKE : Wilwood GP200, Front and Rear
BSCD : 67mm/42.5mm/4/599cc
COOLING : Dana Air to Water and Air to Oil Radiators
DRIVE : Custom Salisbury Style LSD
ELECTRONICS : MoTeC M150 with custom shift and PD modules
ENGINE : Honda CBR600RR
FR/RR TRACK : 1210/47.6 and 1200/47.2
FRAME : Hybrid Spaceframe with Shear Panels
FUEL SYSTEM : EFI with Walbro Pump
FUEL TYPE : 93 Octane
MATERIAL : CFRP, Glass-sintered nylon
MPD : 9000
MPT : 60
OLWH : 3051/120.1, 1386/54.6, 1527/60.1
SUSPENSION : Double Wishbone
TIRE : 10" Hoosier LCO
UNIQUE : Variable length intake manifold
WEIGHT : 620 lbs
WHEELBASE : 1645/64.8



The UT16 vehicle was designed to build upon the team's success in 2015. Several sections were overhauled to improve performance. Emphasis was placed on weight reduction, driver comfort and increased downforce. The UT16 chassis features new carbon fibre sandwich panels which provide a significant weight reduction while maintaining chassis stiffness. Adjustable pedals and seat provides comfort for a wide range of driver sizes. The suspension system features wider and lighter rims than the UT15 vehicle. A pullrod-style system was used to lower the vehicle centre of gravity and reduce yaw inertia. The exhaust system was completely redesigned to both address noise constraints in improve engine power. UT16 is also our first vehicle to feature an aerodynamics package. Despite the increased cost and labour, the team is confident that the aero package will make UT16 our quickest vehicle yet. Expanded data logging and a more comprehensive dash improve driver experience and vehicle testing capabilities. The University of Toronto Formula Racing Team would like to thank all the faculty, sponsors and supporters who helped make UT16 possible. We are eager to make you proud at FSAE Michigan.



BRAKE : ISR Calipers, Radial MC's
BSCD : 96/62/1 cyl/449cc
COOLING : Side mounted aluminum radiator
DRIVE : Chain, Drexler LSD
ELECTRONICS : PE3 ECU, 2D Datalogger
ENGINE : Honda TRX450ER
FR/RR TRACK : 1226mm/1152mm
FRAME : Mild Steel Spaceframe with Carbon Sandwich Panels
FUEL SYSTEM : Custom EFI, Port Injection
FUEL TYPE : 93 Octane
MATERIAL : Mild 1020 steel, carbon fibre
MPD : 9000
MPT : 6500
OLWH : 2923mm/1430mm/1184mm
SUSPENSION : Double unequal A-arm with pullrod
TIRE : Hoosier 10" R25B
UNIQUE : Carbon sandwich panels
WEIGHT : 520lbs
WHEELBASE : 1537



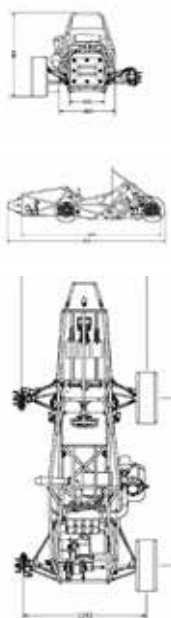
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Univ of Kentucky Formula Kentucky



Formula Kentucky has developed a prototype vehicle, FK01, which epitomizes what it means to be a high performance weekend racer. FK01 was designed using sound engineering principles and a logical, no non-sense approach to meet the needs of the amateur driver. All of the work that has gone in to FK01 has focused primarily on the basic systems and functionality required of a race car with the goal of producing a solid and reliable product. FK01 employs high quality, light weight carbon body panels, side pods, and an under tray in order to reduce weight. The driver position is reclined by 30° to lower the center-of-gravity, and aid driver comfort. Each pedal is independently adjustable fore and aft.

At the heart of FK01 you will find a 599cc 2007 Honda CBR600RR, chosen for its widely accepted reliability and serviceability. Engine management is a piggy-back style Dynojet Power Commander V system with autotune for customer usability. The transmission uses a custom designed electric servo shifter system, controlled with a microcontroller and controlled via buttons on the steering wheel. To deliver power to the wheels FK01 utilizes a tunable limited-slip type differential.



BRAKE : Willwood GP200 Calipers
BSCD : 67 mm/42.5 mm/4 cyl/ 599 cm³
COOLING : Water Cooled Single Radiator
DRIVE : Chain Driven LSD
ELECTRONICS : DynoJet Power Commander V
ENGINE : Honda 600CBR RR
FR/RR TRACK : 1143 mm / 45 in
FRAME : Space Frame
FUEL SYSTEM : OEM
FUEL TYPE : 93 octane unleaded
MATERIAL : AISI 1010 Steel
MPD : 10000 RPM
MPT : 8000 RPM
OLWH : (2995 mm / 117.91 in) L x (1334 mm / 52.51 in) W x (991 mm / 39.02 in) H
SUSPENSION : Pull Rod SLA
TIRE : 18.0" x 7.5", Hoosier R25B
UNIQUE : Electronic shifting
WEIGHT : 650 lb
WHEELBASE : 1530 mm / 60.25 in



United States

122

Univ of British Columbia Formula UBC



This year, Formula UBC focused on improving reliability while also reducing weight in certain areas. The car is powered by a Honda CBR600RR engine with a dry sump oil system. Notable features on the car include a single inboard rear brake, quick-adjust bladed anti roll bar and the aerodynamics package.



BRAKE : ISR calipers, inboard rear brakes
BSCD : 67mm bore, 42.5mm stroke, 4 cylinders, 599cc
COOLING : Single Radiator, electric water pump
DRIVE : Salisbury LSD
ELECTRONICS : Haltech Platinum Sport 1000, AiM Sport MXL2
ENGINE : Honda CBR600RR
FR/RR TRACK : 48" Front, 47" Rear
FRAME : Chromoly Spaceframe
FUEL SYSTEM : Common rail EFI
FUEL TYPE : 93 octane
MATERIAL :
MPD : 10500
MPT : 8000
OLWH : 2868mm x 1405mm x 1175mm
SUSPENSION : Pullrod, double a-arm
TIRE : Hoosier 7x20.5-13 R25B
UNIQUE :
WEIGHT : 650 lbs
WHEELBASE : 60.5 inches



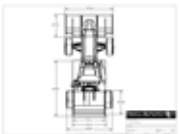
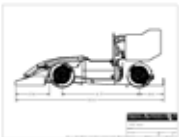
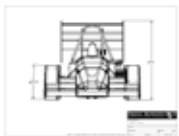
Canada

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Kansas State Univ Powercat Motorsports



The aim of the Kansas State University Formula SAE team is to design an efficient formula style vehicle that can compete at the highest level of competition. The best way for our team to achieve the goal of a top 25 finish, is to first and foremost have a reliable car. Our car must be able to perform in a consistent manner, without failure. By incorporating a light aerodynamics package, a rigid chassis with optimized suspension, a dependable powertrain and a reliable electronics system, we have a car designed to be reliable, predictable, and lightweight.



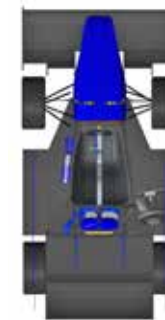
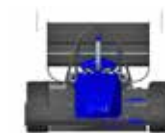
BRAKE : Floating, slotted rotors
BSCD : 3.74in/2.49in/1 cylinder/449cc
COOLING : Liquid cooled
DRIVE : Chain drive
ELECTRONICS : Performance electronics ECU
ENGINE : Yamaha YFZ 450R
FR/RR TRACK : Front: 49.06in Rear: 46.02in
FRAME : Composite monocoque
FUEL SYSTEM : Fuel injected
FUEL TYPE : E85
MATERIAL : Aluminum fuel tank
MPD : 9500 rpm
MPT : 8500 rpm
OLWH : 121.95in x 57.34in x 47.31in
SUSPENSION : Double wishbone, unequal length, non parallel, push rod
TIRE : 13in x 7in, R25B Hoosier
UNIQUE : Electronic paddle shift
WEIGHT : 600 lbs
WHEELBASE : 63.77in

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South Dakota State Univ Wild Hare Racing



WHR-16 is an evolution of last years car. We focused on improving last years design to be more reliable, easier to drive and high performance. Performance is the center of the design with an aggressive aero package, powerful 4 cylinder engine, anti roll bars and wider tires. the engine was developed for a lower peak torque curve to provide a more diver friendly car. the car will incorporate a 3.5" touch screen display and have active launch control and traction control to help the driver push the vehicle.



BRAKE : Tilton 77 series, driver adjustable Tilton bias bar
BSCD : 67mm/42.5mm/4/599cc
COOLING : single radiator with fan shrouding
DRIVE : chain driven
ELECTRONICS : Motec ECU, custom relay board, custom dash
ENGINE : Yamaha r6 06-07
FR/RR TRACK : 51/50 inches
FRAME : laser cut space chromoly steel frame
FUEL SYSTEM : denso injectors
FUEL TYPE : E-85
MATERIAL : chromoly steel, aluminum, Carbon Fiber and maple wood
MPD : 9000
MPT : 8000
OLWH : 110,57,52 inches
SUSPENSION : unequal a-arms
TIRE : 13x20.5x7 R25B
UNIQUE : 3D printed dash board
WEIGHT : 620
WHEELBASE : 64 inches



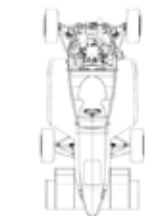
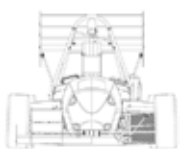
125 Univ of Manitoba Polar Bear Racing



Polar Bear Racing is excited to present PBR16 at Formula SAE Michigan. The design philosophy of PBR16 was to build a racecar with strong fundamentals matched with competitive performance. Extra focus has been placed on reliability, serviceability, manufacturing quality, and design validation to ensure the car can achieve the team's goals.

The car features a new CFRP monocoque design that was focused on increasing chassis stiffness and improving quality. The car is powered by a Honda CBR600RR engine running off of E85 and features a rapid prototyped intake, Drexler differential, and a custom power control module. A strong focus has been placed on data acquisition and as a result, the car is equipped with a wide range of sensors for both powertrain diagnostics and vehicle dynamics. The driver experience has also been vastly improved with adjustable pedals, a contoured CFRP seat, custom steering wheel grips, and a new driver interface.

PBR16 is sure to be Polar Bear Racing's fastest car yet and we are very excited to prove it!



BRAKE : Floating Cast Iron Rotors, Tilton Master Cylinders, Wilwood PS-1 Calipers

BSCD : 67mm / 42.5mm / 4 / 599cc

COOLING : Water Cooled

DRIVE : Rear Wheel Chain Drive

ELECTRONICS : AEM Infinity ECU, Custom Driver Interface, Custom Power Control Module

ENGINE : CBR600RR

FR/RR TRACK : 1219mm (48in) / 1118mm (44in)

FRAME : CFRP Monocoque

FUEL SYSTEM : Sequential EFI

FUEL TYPE : E85

MATERIAL : Rich Mahogany

MPD : 9500

MPT : 8000

OLWH : 3028mm, 1444mm, 1153mm

SUSPENSION : Unequal length SLA A-Arms with pull-rods and anti-roll bars

TIRE : 18.0x6.0-10 R25B Hoosier

UNIQUE : Cup Holder

WEIGHT : 265.35kg (585lb)

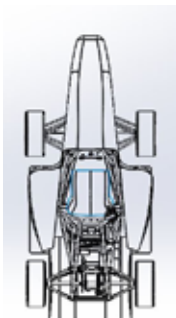
WHEELBASE : 1619mm (63.74in)



127 Washington State Univ Wazzu Racing



Team Wazzu racing is a relatively new team with experience of building only one car the prior year. Taking lessons learned from assembling a car last year, we opted to design a new model from scratch with a few key goals in mind. These goals are simple, reliable and cost effective. In order to provide our customers with the best possible value, we chose to incorporate standard OEM components for all major consumables; including axles, brake rotors, and hub bearings and spindles. To further improve the value of our vehicle we utilize a readily available Honda CBR600 F4i engine, highly adjustable Ohlins ttx-25mkii shocks, powerful 4-piston Wilwood brakes and cost-effective carbon fiber body with optimized aerodynamics. This year's car utilizes a spooled differential, reducing unsprung mass and improving reliability. An upright design which is universal for all corners of the car and is highly adjustable was chosen, further reducing the cost in spare parts and allowing for the addition of an alternate differential and/or tuned driving characteristics. These features combined with our easily manufactured chassis give an upgradable platform which can be tuned at reasonable cost.



BRAKE : Tilton master cylinders/ Willwood GP320 calipers/ Floating rear rotor

BSCD : 67mm/42.5mm/4/599cc

COOLING : Single core radiator w/ cooling fan

DRIVE : Chain/ Spool rear differential

ELECTRONICS : Megasquirt 2 V3.0

ENGINE : Honda CBR600F4i

FR/RR TRACK : 1248mm/1212mm

FRAME : Steel Space frame

FUEL SYSTEM : Fuel Injected, external fuel pump and regulator

FUEL TYPE : 93

MATERIAL : 1020 cold drawn DOM tube

MPD : 10,500 rpm

MPT : 9,000 rpm

OLWH : 3268mm/1470mm/1329mm

SUSPENSION : Double unequal length A-Arms/ Pushrod actuated coilovers

TIRE : 20.5"x7"x13", R25B Hoosier

UNIQUE : Carbon fibre undertray/diffuser

WEIGHT : 301 kg/664 lb

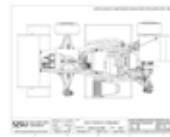
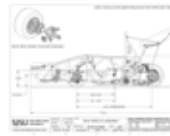
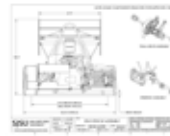
WHEELBASE : 1702mm





The 2016 Formula SAE competitions mark the eighth consecutive year for San Jose State University's Spartan Racing Formula team. SR-8 is an evolution of SR-7, our 2015 entry that won 1st place overall in Lincoln. SR-8 features a 4130 steel tube frame, 10in Hoosier tires, full aerodynamics package, and is powered by a Honda F4i 4-cylinder engine running on E85. While assessing the 2015 season, we found that the largest gains in vehicle performance were found during the testing phase between Michigan and Lincoln events. We concluded that an emphasis on testing and validation was necessary to repeat the high dynamic scores seen last year.

Spartan Racing would like to thank all of our sponsors, families, friends and alumni for their continued support.



BRAKE : Tilton 77 MC, Wilwood GP200 Calipers
BSCD : 67mm, 42.5mm, 4, 599cc
COOLING : Dual Core, Dual Pass
DRIVE : Chain Drive, Drexler Limited Slip Differential
ELECTRONICS : DTA S100 ECU, Aim EVO4 DAQ
ENGINE : Honda CBR600 F4i
FR/RR TRACK : 48 in, 47 in
FRAME : 4130 Steel Space Frame
FUEL SYSTEM : Single-rail EFI
FUEL TYPE : E85
MATERIAL : 4130 Steel, Carbon Fiber
MPD : 73 HP @ 11,000 RPM
MPT : 37 ft-lbs @ 10,000 RPM
OLWH : 115 in, 56 in, 51 in
SUSPENSION : Front Pullrod, Rear Pushrod, Ohlins Shocks
TIRE : 18x6x10 (Front), 18x7.5x10 (Rear) Hoosier R25B
UNIQUE : Closed Loop Electro-pneumatic Shifting
WEIGHT : 570 lbs
WHEELBASE : 60.5 in



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Website: www.saea.com.au/formula-sae-a/

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First Competition - 2004

Website: www.saebrasil.org.br/eventos/programas_estudantis/

FORMULA SAE ITALY

First Competition - 2005

Website: www.ata.it/content/event-formula-ata/formula-sae-italy-formula-electric-italy-2015

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First Competition - 2006

Website: www.formulastudent.de/

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