SAE INTERNATIONAL®

2017 FORMULA SAE LINCOLN/ELECTRIC

EVENT GUIDE

2016 1st Place IC Class Overall – Auburn University

FORMULA SAE
LINCOLN/ELECTRIC

#FSAELINCOLN

FORMULA SAE LINCOLN / ELECTRIC
2017 SAE PRESIDENT'S MESSAGE

Formula SAE Lincoln/Electric
2017 SAE President's Message

Dear Formula SAE® Participants and Organizers:

Welcome to the Formula SAE and Formula SAE Electric competitions in Lincoln, Nebraska. 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.

The Formula Electric competition, in its sixth year, offers a unique set of skills and learning opportunities related to the burgeoning electric powertrain technologies.

In short, Formula SAE competitions, along with all of the SAE Collegiate Design Series™ competitions, provide the skills and experiences needed for a well-rounded engineering education.

In addition to learning, Formula SAE also provides a unique form of competition. This week, collegiate engineering students from many different 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 win first place, others will not. But all will leave here winners because they will be better engineering students.

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

Sincerely,

Douglas Patton
2017 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 110 teams from colleges and universities participating with both internal combustion and electric powertrain. 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	75	Presentation
(Thursday)	150	Design
	100	Cost Analysis
Dynamic Events	75	Acceleration
(Friday & Saturday)	50	Skid-Pad
	150	Autocross
	100	Fuel Efficiency
	300	Endurance
TOTAL POINTS	1000	

2017 FORMULA SAE® LINCOLN
SCHEDULE OF EVENTS

TUESDAY, JUNE 20

		Location
3:00 p.m. – 7:00 p.m.	Student Registration and Paddocking (DROP OFF ONLY)	Registration Tent

WEDNESDAY, JUNE 21

		Location
10:00 a.m.	Gear Check Opens	Danley Bldg.
11:00 a.m.	Welcome Ceremony	Main Tent
	Captain and Advisors Meeting immediately following	
11:30 a.m.	**Tech Inspector Volunteer Review Session**	**Danley Bldg.**
4:00 p.m. – 5:10 p.m.	**Design Judge Orientation/Review**	**Danley Bldg.**
5:10 p.m. – 5:25 p.m.	**EV Safety Orientation Review for Design Judges**	**Danley Bldg.**
5:30 pm	Drivers Meeting - Brake and Practice – MANDATORY	Main Tent
	Competitor – Design Briefing	
7:30 p.m.	Official Closing of the Site	
8:00 p.m.	Everyone must be off site	

THURSDAY, JUNE 22 (all times preceded by "~" are approximate)

		Location
7:30 a.m.	**Judges Meeting for Design**	**Danley Bldg.**
8:00 a.m.	**Judges Meeting for Cost**	**Cost Tent**
8:00 a.m. – 5:30 p.m.	Design Judging – 1st Round Open	Danley Bldg.
8:30 a.m.	**Judges Meeting for Presentation**	**Arnold Elementary School**
9:00 a.m. – 5:00 p.m.	Cost Event Open	Main Tent
9:00 a.m. – 5:00 p.m.	Presentation Event Open	Arnold Elementary School
Noon – 1:00 p.m.	Lunch Break	
2:00 p.m.	Dynamic Event Courses Open for Driver Walks	
5:30 p.m.	Drivers Meeting - All Dynamic Events - Mandatory	Main Tent
6:30 p.m.	**Design Judges Meeting - Judges only**	**Offsite**
7:30 p.m.	Official Closing of the Site	
8:00 p.m.	Everyone must be off site	
~10:00 p.m.	Design Finalist announced online (sae.org and social media)	

FRIDAY, JUNE 23 (all times preceded by "~" are approximate)

		Location
7:30 a.m.	**Course Crew Briefing - Acceleration and Skid Pad**	**Event Courses**
	****EV safety Briefing for Dynamic Volunteers**	
8:00 a.m. – 11:30 p.m.	Skid Pad Event and Acceleration Events Open	Track
9:00 a.m. – 4:30 p.m.	Design Feedback for Non-finalists by appointment	Danley Bldg.
9:30 a.m. – 10:00 a.m.	Presentation Feedback Seminar for Q&A	Main Tent
11:45 a.m. – 12:45 p.m.	Lunch Break; Student Pizza Lunch sponsored by Honda	Main Tent
1:00 p.m.	**Course Crew Briefing - Autocross**	**Track**
	****EV safety Briefing for Dynamic Volunteers**	
1:30 p.m. – 4:30 p.m.	Autocross Event Open	Track
5:00 p.m. – 7:30 p.m.	Design Finals	Danley Bldg.
7:30 p.m.	Official Closing of the Site	
8:00 p.m.	Everyone must be off site	

SATURDAY, JUNE 24 (all times preceded by "~" are approximate)

		Location
8:00 a.m.	**Endurance Course Crew Briefing**	**Track**
	***EV Safety Briefing for Dynamic Volunteers**	
8:30 a.m. – ~4:00 p.m.	Endurance/Fuel Economy Event Open	Track
~9:00 a.m.	Top 3 Teams Design Finalists Announced	
9:00 a.m. – 4:00 p.m.	Design Feedback by appointment	Danley Bldg.
~Noon – 1:00 p.m.	Lunch Break	Main Tent
~4:30 p.m.	Presentation Highlights	Main Tent
~5:45 p.m.	Design Review of Top IC and EV Teams	Main Tent
~7:00 p.m.	Awards Ceremony Sponsored by General Motors	Main Tent
8:30 p.m.	Official Closing of the Site	
9:00 p.m.	Everyone must be off site	

SUNDAY, JUNE 25

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

DAILY OPERATIONS:

- **Lincoln Airpark Site Open:**
  - Wednesday 9:00 a.m. – 7:30 p.m.
  - Thursday – Saturday 7:30 a.m. – 7:30 p.m.
- **Student Registration (Tent):**
  - Wednesday 9:00 a.m. – 4:30 p.m.
  - Thursday 8:00 a.m. – 12:00 p.m.

  Fri. - Sat. All students will be registered as spectators
- **Volunteer Registration & Info (Tent):**
  - Wednesday 8:00 a.m. – 5:00 p.m.

    Thursday – Saturday 7:15 a.m. – 5:00 p.m.
- **Tech Inspection (Danley Bldg):**
  - Wednesday 1:00 p.m. – 7:00 p.m. (no new cars after 6:00 p.m.)
  - Thursday 8:00 a.m. – 5:00 p.m.
  - Friday By appointment until 2:00 p.m.
- **Scales (Danley Bldg):**
  - Wednesday 9:30 a.m. – 5:00 p.m.
  - Thursday 8:00 a.m. – 5:00 p.m. (after Noon by appointment only)
- **Tilt/Noise/Brake:**
  - Thursday 8:30 a.m. – 5:00 p.m.
  - Friday Fri. 8:30 a.m. – 5:00 p.m. (after 2:00 p.m. by appt only)
- **Fuel Station**
  - Thursday – Friday 8:30 a.m. – 4:00 p.m.
  - Saturday 7:30 a.m. – 4:00 p.m.
- **Practice Area:**
  - Thursday Noon – 5:00 p.m.
  - Friday 8:00 a.m. – 5:00 p.m.
  - Saturday 7:30 a.m. – 3:00 p.m.

NOTE: Cars must complete all 3 parts of tech by 5:00 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.

2017 FORMULA SAE® LINCOLN
SCHEDULE OF EVENTS

NOTES

- Drivers Meeting – There will be only one drivers meeting covering all dynamic events at 5:30 pm Thursday. There will be brief drivers meeting for Brake and Practice at 5:30 Wednesday. Drivers are required to attend driver's meetings. Failure to attend driver's meetings may result in the revocation of your driving privileges.
- Event Closing Time - Acceleration, Skid Pad and Autocross close exactly at the scheduled time. Your car must have crossed the starting line before the event closing time in order to be allowed to complete that run.
- Course Walks – Autocross and Endurance will be available to walk starting Thursday @ 2 pm and will be accessible up to the start of the event. Drivers are required to walk the course for each event in which they will be behind the wheel. Course walks will not be scheduled for individual events.
- Removing Vehicles – Vehicles may be taken off site at the individual team's discretion provided Part 1 of the Inspection Sticker has been removed by Tech Chief.
- EMS will provide any/all medical attention.
- All teams not shipping cars must remove their vehicles, etc. from the site no later than 2:00 pm Sunday, June 25, 2017.
- Teams shipping cars must have them picked up and removed from the site by 10:00 am Monday, June 26, 2017.
- Announcements can be heard via FM radio (Frequencies will be posted in the Reg. /Info. Tent).

SUPPORT SERVICES

- **Lincoln Electric Welding Services**
  - Wed. 1:30 p.m. – 5:00 p.m.
  - Th. - Fri. 9:00 a.m. – 5:00 p.m.
  - Sat. 9:00 a.m. – Noon
- **Hoosier**
  - Wed. 1:30 p.m. – 5:00 p.m.
  - Th. - Fri. 9:00 a.m. – 5:00 p.m.
  - Sat. 9:00 a.m. – Noon
- **Food Vendors - See map for location***
  - All days ~8:00 am – 5:00 pm

  ** As business dictates. May close earlier if deemed appropriate.*
- **Lincoln Airpark Fire trucks on site:**
  - Wed. – Sat. 7 a.m. – ~8 p.m.
- **Ambulance on site**
  - Wed. – Sat. 7 a.m. – ~8 p.m.
- **Information (Main Tent/Danley Bldg):**
  - Th. – Sat. 7:30 a.m. – 5:00 p.m.

2017 FSAE LINCOLN **AWARDS**

SPIRIT OF EXCELLENCE AWARD
This award recognizes the Top 10 IC and Top 3 EV finishers with overall highest accumulative scores.

STATIC EVENTS

COST AWARD
This award recognizes the Top 3 IC and Top 3 EV finishers with overall highest accumulative scores in Cost.

ENGINEERING DESIGN AWARD
This award recognizes the Top 3 IC and Top 3 EV finishers with overall highest accumulative scores in Design.

PRESENTATION AWARD
This award recognizes the Top 3 IC and Top 3 EV finishers with overall highest accumulative scores in Presentation.

DYNAMIC EVENTS

ACCELERATION AWARD
This award recognizes Top 3 IC and Top 1 EV finishers with fastest speeds/highest accumulative scores in Acceleration.

AUTOCROSS AWARD
This award recognizes Top 3 IC and Top 1 EV finishers with fastest speeds/highest accumulative scores in Autocross.

COOPER TIRE ENDURANCE AWARD
This award recognizes Top 3 IC and Top 1 EV finishers with fastest speeds/highest accumulative scores in Endurance.

COOPER TIRE FUEL EFFICIENCY AWARD
This award recognizes Top 3 IC and Top 1 EV finishers who receive highest scores accumulated on best fuel efficiency.

SKID PAD AWARD
This award recognizes Top 3 IC and Top 1 EV finishers with fastest speeds/highest accumulative scores in Skid Pad.

SPECIALTY AWARDS (These are special created sponsored awards; some may require application process)

THREE VIEW DRAWING EXCELLENCE AWARD - AWARD APPLICATION INFORMATION
Awarded to the top ten Formula SAE teams who submit the best executed three view drawings, per the Formula SAE Rule S6.4. Top 3 teams receive award; teams 4-10 honorable mention.

2017 FORMULA SAE LINCOLN
REGISTERED TEAMS

BRAZIL
11 **Faculdade de Engenharia de Sorocaba**
V8 Racing

CANADA
21 **Univ of Saskatchewan**
Huskie Formula Racing
24 **Queen's Univ - Ontario Canada**
Queen's Formula
31 **Univ of Alberta**
University of Alberta Formula SAE
33 **Concordia University**
Concordia Formula Racing
40 **Univ of Calgary**
Schulich Racing

INDIA
72 **Chandigarh Engineering College**
The Mean Mechanics
77 **Hindustan University**
ATRAIU RACING

JAPAN
82 **Honda Technical College Kansai**
Yonpakuto

MEXICO
17 **Instituto Tecnologico de Chihuahua**
panteras racing team
63 **IPN Esime Zacatenco**
IPN Racing Team
71 **Universidad Panamericana**
UP Racing

PAKISTAN
86 **Univ of Engrg & Tech - Lahore**
KSK Formula Racing

SOUTH KOREA
93 **Yeungnam College of Science & Tech**
YUC FORMULA EXPEDITION

UNITED STATES
1 **Auburn Univ**
War Eagle Motorsports
2 **Univ of Washington**
UWashington Formula Motorsports
3 **California State Poly Univ - Pomona**
Bronco Motorsports
4 **Missouri University of Science and Tech**
S&T Racing
5 **Iowa State Univ**
Cyclone Racing
7 **Rose Hulman Inst of Tech**
Rose GPE
10 **Wayne State Univ**
Warrior Racing
13 **Univ of St Thomas**
Turbo Tommies
14 **California State Univ - Northridge**
Matador Motorsports
15 **California Baptist University**
CBU COE SAE Racing
16 **Arizona State Univ - Tempe**
SunDevil Motorsports
18 **Univ of Nebraska - Lincoln**
Husker Motorsports
19 **San Diego State Univ**
Aztec Racing
20 **California State Univ - Los Angeles**
Golden Eagle Motorsports
22 **Univ of Calif - Irvine**
UCI Racing
23 **Texas A & M Univ - College Station**
Texas Aggie Racing
25 **California Polytechnic State Univ-SLO**
Cal Poly Racing
26 **Western Washington Univ**
WWU Racing
27 **Virginia Commonwealth Univ**
Formula SAE at VCU
28 **Univ of New Mexico**
LOBOmotorsports
29 **Univ of Houston - Houston**
Cougar Racing
34 **Oregon Inst of Tech**
Oregon Tech Racing
35 **Colorado School of Mines**
CSM Formula
36 **Wichita State Univ**
Shocker Racing
37 **Univ of Wisconsin - Platteville**
Pioneer Racing
39 **Univ of Texas - Austin**
Longhorn Racing
41 **Univ of Colorado - Denver**
Lynx Motorsports
42 **Kennesaw State University**
KSU Motorsports
43 **Syracuse Univ**
Citrus Racing at Syracuse University
44 **Univ of North Dakota**
UND FSAE
45 **Portland State Univ**
Viking Motorsports
46 **Univ of Texas - San Antonio**
Roadrunner Racing
47 **Univ of Louisville**
Speed FSAE
49 **Southern Methodist Univ**
Hilltop Motorsports
51 **Univ of Calif - Berkeley**
Berkeley Formula Racing
52 **Georgia Southern Univ**
Eagle Motorsports
53 **Univ of North Texas**
Mean Green Racing
54 **Univ of Calif - San Diego**
Triton Racing
55 **California State Univ - Sacramento**
Hornet Racing
56 **Oklahoma State Univ**
OKState Racing
57 **North Carolina State Univ - Raleigh**
Wolfpack Motorsports
58 **Univ of Southern California**
USC Racing
60 **California State Univ - Long Beach**
Gold Digger Racing
61 **California State Univ - Fullerton**
Titan Racing
62 **Univ of Oklahoma**
Sooner Racing Team
65 **Univ of Texas - Arlington**
UTA Racing
67 **Univ of Delaware**
Blue Hen Racing
69 **Univ of Calif - Los Angeles**
Bruin Racing
70 **Univ of Arizona**
Wildcat Formula Racing
73 **Clarkson University**
Formula Knights Racing
76 **Univ of Hawaii - Manoa**
Rainbow Warrior Racing
78 **Univ of Calif - Riverside**
Highlander Racing
79 **Univ of North Carolina - Charlotte**
49ers Racing
80 ***California State Univ - Chico***
Wildcat Racing
94 **Florida A&M Univ/Florida State Univ**
F-Racing
95 **Univ of Illinois - Urbana Champaign**
Illini Motorsports
96 **Univ of Kansas - Lawrence**
JAYHAWK MOTORSPORTS
97 **Oakland University**
Grizzlies Racing
99 **San Jose State University**
Spartan Racing
100 **Louisiana State Univ**
TigerRacing
101 **Georgia Institute of Technology**
Georgia Tech Motorsports
104 **Kansas State Univ**
Powercat Motorsports
105 **Univ of Missouri**
Mizzou Racing
107 **Virginia Tech**
VTMc
108 **Western Michigan Univ**
Bronco Racing
109 **Kettering Univ**
Kettering University Motorsports

2017 FORMULA SAE ELECTRIC
REGISTERED TEAMS

BRAZIL

E211 Universidade Estadual de Campinas
Unicamp E-Racing

CANADA

E203 Polytechnique Montréal
Poly eRacing

E204 McGill Univ
McGill Formula Electric

E226 Université Laval
Formule SAE de l'Université Laval

E227 Univ of Waterloo
Waterloo Formula Electric

E229 Univ of British Columbia
UBC Formula Electric

MEXICO

E234 Universidad Nacional Autónoma de México
UNAM Motorsports EV

PAKISTAN

E228 Pakistan Navy Engineering College
Formula Electric Racing - NUST

UNITED STATES

E202 Univ of Pennsylvania
Penn Electric Racing

E205 Missouri University of Science and Tech
Formula Electric at Missouri Univ of Science and Technology

E206 Massachusetts Inst of Tech
MIT Motorsports

E207 San Jose State University
Spartan Racing Electric

E208 California Polytechnic State
Univ-SLO Cal Poly Racing

E210 Univ of Calif - Davis
UC Davis Formula Racing

E212 Colorado State University
CSU Ram Racing

E213 San Diego State Univ
Aztec Electric Racing

E214 Purdue Univ - W Lafayette
Purdue Electric Racing

E215 California Institute of Technology
Caltech Racing

E217 Univ of Kansas - Lawrence
Jayhawk Motor Sports

E219 Univ of Illinois - Urbana Champaign
Illini Formula Electric

E220 Virginia Tech
VTMe

E221 Univ of Wisconsin - Madison
Wisconsin Racing (EV)

E222 Georgia Institute of Technology
HyTech Racing

E224 Univ of Texas - Austin
Longhorn Racing Electric

E225 Univ of Utah
Formula U Racing

E231 Univ of North Carolina - Asheville
UNCA Motorsports

E233 Univ of Michigan - Dearborn
UM Dearborn Electric Racing

E237 Univ of Washington
UWashington Formula Motorsports

E238 Olin College of Engineering
Olin Electric Motorsports

1 Auburn Univ
War Eagle Motorsports

AU-2017c is a complete redesign of the award winning 2016 car with the conversion to a full monocoque, switch to the Yamaha FZ-07, and further expansion of the aerodynamics package. Key design goals are: increase in downforce, better engine optimization, and reliability. 2017c is designed to be the fastest Formula SAE race car with emphasis on adaptability to changing race conditions and verification of changes through an enhanced data acquisition system. This is the beginning of a new era in Auburn University FSAE racing vehicles.

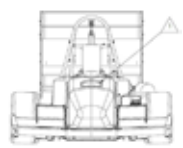
BRAKE : Floating Rotor, Adjustable Bias
BSCD : 80mm, 68.6mm, 2 , 698cc
COOLING : Triple Pass Radiator
DRIVE : Chain Drive, Salisbury Differential
ELECTRONICS : MoTec Electronics, Wireless Telemetry, Steering Wheel Display, Bosch ETC
ENGINE : Yamaha FZ-07
FR/RR TRACK : 1219/48//1194/47
FRAME : CFRP Monocoque
FUEL SYSTEM : In-Tank Pump, Port Injection
FUEL TYPE : 93 Octane
MATERIAL :
MPD : 9000
MPT : 6500
OLWH :
SUSPENSION : SLA
TIRE : 10" R25B/13" C16 rains
UNIQUE : One of the wings is at 69°
WEIGHT : 569
WHEELBASE : 1536.7/60.5

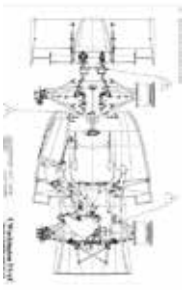
United States

2 Univ of Washington
UWashington Formula Motorsports

For the 2017 competition season, the University of Washington Formula Motorsports team (UWFM) has iterated on the previous year's design after a complete chassis and aerodynamic redesign in 2016. The overall vehicle remains similar but features small design changes to improve performance, such as ergonomic additions to provide more information to the driver and additions to the aerodynamic package to increase downforce. The similarities will allow returning drivers and race engineers to feel familiar around the car while pushing performance further with the changes in design.

Design Objectives
• Design every part and assembly as a system, with overall competition points in mind. Team direction, design compromises, and decisions are made accordingly
• Reduction of part and assembly weight through improved understanding of load cases and analyses, while still meeting
performance targets
• Utilize as test data as possible to validate theoretical models and concepts
• Provide and utilize ample testing time to extract maximum vehicle and driver performance, as well as reliability





BRAKE : Ductile iron rotors, Tilton 77 series 5/8" bore master cylinders
BSCD : 98mm Bore, 68.5mm stroke, Single Cylinder, 478cc Displacement
COOLING : Side mounted CBR radiator
DRIVE : 520 chain drive, stock 5 speed gearbox
ELECTRONICS : Custom 22AEG harness, custom 12V battery, CAN controlled power distribution
ENGINE : Yamaha YFZ-450R, bored to 478cc
FR/RR TRACK : 1219mm / 1143mm
FRAME : One piece, full composite monocoque
FUEL SYSTEM : 1.6L carbon fiber tank, dual Siemens injectors, custom mapping algorithm
FUEL TYPE : 92 (R M)/2 Gasoline
MATERIAL : Toray T700 uni/pw, Cytek FM300-2 adhesive, Plascore Aluminum Honeycomb
MPD : 10000
MPT : 8500
OLWH : 2883mm, 1410mm, 1158mm
SUSPENSION : Double unequal length A-Arms, pull/push rod actuated
TIRE : Hoosier LC0 6.0/18.0-10
UNIQUE : Side wings, load cells all four corners, 6 inch adjustable pedal tray
WEIGHT : 493 lb
WHEELBASE : 1562mm

United States

COOPERTIRES®

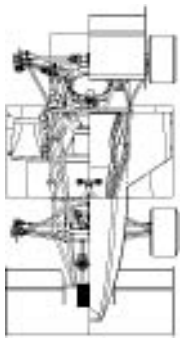
Cooper Tire is a proud sponsor of Formula SAE.

When performance matters count on Cooper Tire.

coopertire.com

3 California State Poly Univ - Pomona
Bronco Motorsports

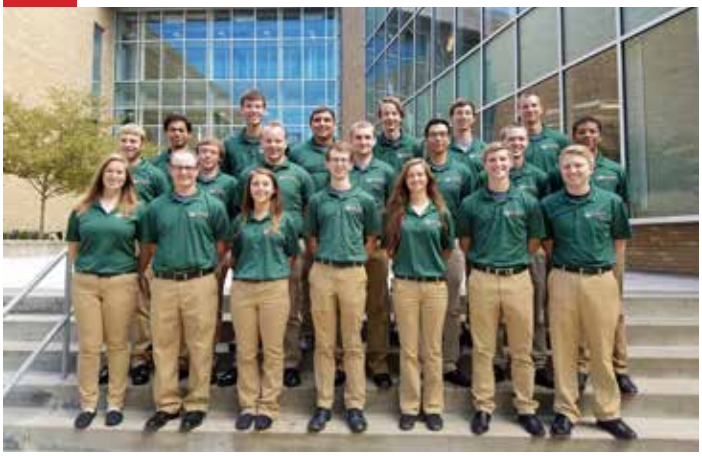
Newly rebranded as Bronco Motorsports, Cal Poly Formula SAE is proud to presents its 2017 vehicle. Last season, being our most successful one yet, we took a big step forward in terms of driving performance and the reliability of our car. This year, like every year, we plan to maintain if not exceed our performance and reliability compared to past cars as we compete for another podium finish. The major additions to the new vehicle include titanium a-arms, increased downforce, and carbon fiber wheels. None of this would be possible without our friends, family, and sponsors. And finally, a special thank you to our advisor Professor Clifford Stover, who has been supporting us for the past 22 years!



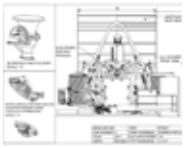
BRAKE : Disc with dual piston caliper
BSCD : 67.0mm / 42.5mm / 4 / 599cc
COOLING : Single pass radiator with custom cooling fan motor
DRIVE : Drexler differential with plunging tripod half-shafts
ELECTRONICS : AEM ECU, IPETRONIK CAN data logger, electronic shifter and throttle body
ENGINE : 2008 Yamaha YZF-R6
FR/RR TRACK : 1250mm / 1220mm
FRAME : 4130 Chrome-Moly steel space frame
FUEL SYSTEM : Multi-Port EFI
FUEL TYPE : 93
MATERIAL : Carbon Fiber
MPD : 13050 RPM
MPT : 8700 RPM
OLWH : 2921mm, 1473mm, 1168mm
SUSPENSION : 4-Way adjustable coil cover / Rocker arm/pullrod inboard
TIRE : 18.0 x 7.5-10, Hoosier R25B
UNIQUE : Titanium A-arms, carbon fiber wheels, torque command pedal
WEIGHT : 615lbs
WHEELBASE : 1550mm

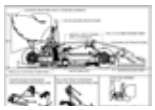
United States

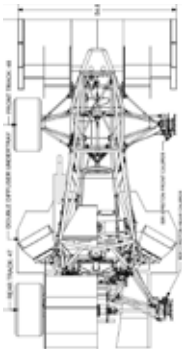
4 Missouri University of Science and Tech
S&T Racing



Missouri S&T's 2017 Formula SAE car relies on a high down force, high horsepower 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. S&T Racing would like to thank our family, friends, and sponsors for supporting us throughout the year. We couldn't do it without your help!







BRAKE : Front ISR 4 Piston Monobloc, Rear 2 Piston Monobloc
BSCD : 67mm/42.5mm/4/600cc
COOLING : Dual Single Pass Radiators
DRIVE : Chain Drive
ELECTRONICS : Battery 6Ah A123 LiFePO4 Cells, AiM Evo4, 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 Chromoly Steel
MPD : 12000
MPT : 9500
OLWH : 3010mm/1448mm/1193mm
SUSPENSION : Un-Equal Length Double A-arm
TIRE : 18x7.5-10 Hoosier R25B
UNIQUE : Semi-Unspring Aerodynamics Package
WEIGHT : 585lb
WHEELBASE : 1625mm

United States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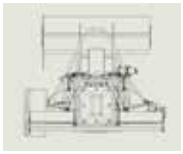
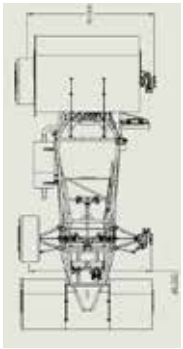
5 Iowa State University
Cyclone Racing

During the design phase of CR22, Cyclone Racing sought to improve all systems of the vehicle using prior years' lessons and achievements. Major goals surrounding the build focused on weight reduction, increases in aerodynamic efficiency, and improved powertrain reliability. Suspension components have continued the tradition of unique, plate machined aluminum A-arms and 10'x7' wheels to both maximize stiffness and simplify manufacturing. Powertrain continues the use of the Yamaha YFZ450R engine, yet adds an SLS 3D printed intake and custom muffler containing both a resonance and damping chamber to reduce noise levels. In addition, a dual-pass radiator was designed to improve cooling capacity. Driver controls again feature the AIM MXL, a custom bias bar assembly to reduce cost and weight, and a Rekluse slipper clutch. Electronic shifting was again utilized, with actuators being moved to push-buttons mounted to the steering wheel. Using aircraft fabric and foam core wings, aerodynamic manufacturing became a swift process for a full build of more efficient wing profiles.





BRAKE : Wilwood PS-1 Calipers, Tilton 78 Series Master Cylinders
BSCD : 95 mm/63.4 mm/1/449 cc
COOLING : Dewitt s-Built Dual-Pass Radiator, SPAL Fan
DRIVE : Torsen Type T1 Differential in Custom Aluminum Housing
ELECTRONICS : Electornics PE3 ECU, AiM MXL Data Logger
ENGINE : 2014 Yamaha YFZ450R, 14:1 Wiseco Piston
FR/RR TRACK : Front: 1219 mm/48 inch, Rear: 1270 mm/50 inch
FRAME : TIG Welded 1020 Steel Spaceframe, Black Textured Powder Coat
FUEL SYSTEM : Bosch EV14 Injector, Holley FPR, SLS Printed Fuel and Overflow Tank
FUEL TYPE : E85
MATERIAL :
MPD : 42 HP at 9000 RPM (31.3 kW)
MPT : 28 ft-lb at 7750 RPM (38 Nm)
OLWH : Length: 2781 mm/109.5 inch Width: 1435 mm/56.5 inch Height: 1067 mm/42 inch
SUSPENSION : Pushrod Actuated Ohlins TTX25 MKII Dampers, NonParallel Unequal Length A-Arm
TIRE : 7.0/18.0-10 Hoosier R25
UNIQUE : Machined Aluminum A-Arms, Trademarked University Logo
WEIGHT : 524 lb/238 kg
WHEELBASE : 1575 mm/62 inch

7 Rose Hulman Inst of Technology
Rose GPE

RoseGPE's goals for the 2017 season include turbocharging our YFZ450R powerplant, creating a custom data acquisition system and CAN connected electronics system, increasing aerodynamic efficiency, and improving the reliability and serviceability of the car as a whole. We believe this will help create a competitive car at both the Michigan and Lincoln competitions.

BRAKE : stopping distance: 19.25m at 24.5m/s, inboard rear, elec. bias control
BSCD : 95mm/63.4mm/Single/450cc
COOLING : Electric water pump and fan
DRIVE : Chain drive
ELECTRONICS : Custom microcontroller network using CAN
ENGINE : Yamaha YFZ 450R
FR/RR TRACK : 1219 mm, 1194 mm
FRAME : 4130 Steel tube frame
FUEL SYSTEM : Electronic fuel injection
FUEL TYPE : Gasoline, 100 octane
MATERIAL : Carbon fiber wings and body
MPD : 9500
MPT : 6500
OLWH : 2755, 1422, 1199 mm
SUSPENSION : Pullrod front, pushrod read. Double wishbone
TIRE : 6.0/18.0-10" Hoosier LCO
UNIQUE : Carbon fiber reinforced chassis, turbo charger
WEIGHT : 530 lbs.
WHEELBASE : 62 in.

Information published as supplied by teams on or before April 10, 2017 with minimal editing.

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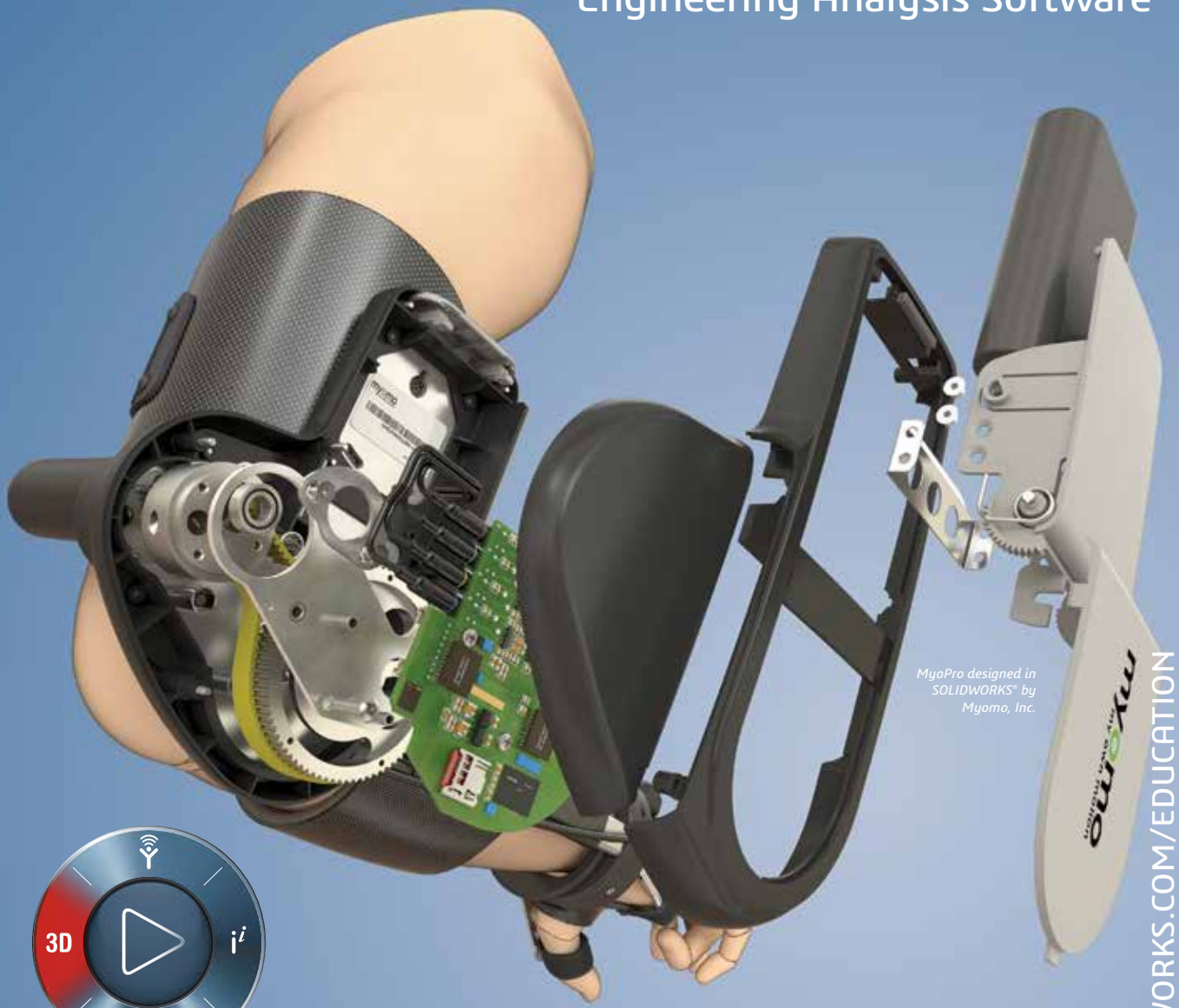

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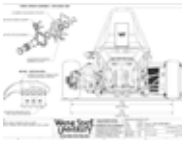
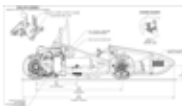
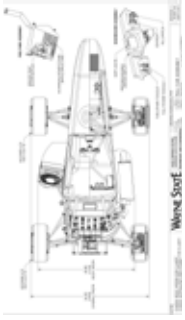
10 Wayne State University
Warrior Racing

The Wayne State University Formula SAE team is entering its 15th competition season with its 11th iteration vehicle, Road Warrior 11 (RW11). The design of RW11 was influenced by the success of our previous vehicles, RW9 and RWX which performed better than any other vehicles in our team's history. Our goals for the vehicle included decreasing the overall weight of vehicle to 420lbs by keeping an updated weight log, transferring knowledge to younger members, and increasing team exposure and publicity in the community.

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.







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 : 1168mm/1193mm (46in/47in)
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 : 2690/1422/1087 (105.9/56/42.8)
SUSPENSION : Double Wishbone SLA ; Pullrod actuated; Front and Rear ARB
TIRE : Hoosier LC0: Front 6.0/18.0-10 , Rear 6.0/18.0-10
UNIQUE :
WEIGHT : 272.5 kg
WHEELBASE : 1530.35 mm /60.25 in

United States

11 Faculdade de Engenharia de Sorocaba
V8 Racing

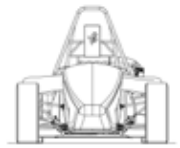
V8 Racing team is a Brazilian team formed by 25 engineering students form Sorocaba and region. Traditionally participating on the Formula SAE BRASIL competition, being present since 2005 and ever since gaining good results and experience.

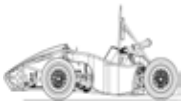
The 2017 prototype called F-XVII was designed with two goals in mind. Reduce the weight and improve the performance. By using a vast variety of tools from modern engineering both goals were achieved.

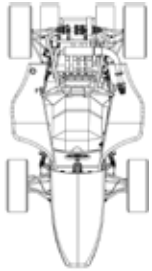
The project is maintained by the college and Sorocaba's industries that are concerned about the national education and its future employees, so the sponsors are very important for the project to be done.

With a body all made out of carbon fiber, a 4 cylinder engine, a double wishbone suspension on both front and rear, 13' wheels, self designed brake system, steering system, wheel hubs and uprights, the team is confident that will represent the Brazilian FSAE scenery at Lincoln, a global level FSAE competition.

#13stillworks







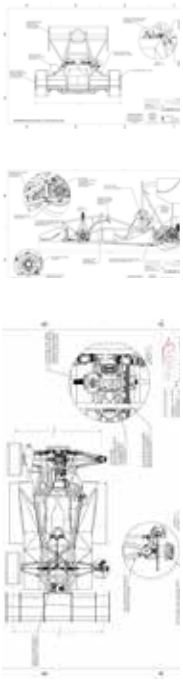
BRAKE : Willwood calipers / steel floating rotors
BSCD : 67/42.5/4/599
COOLING : SingleSide mounted radiator
DRIVE : Chain-Drive
ELECTRONICS : Telemetry
ENGINE : Honda CBR600RR
FR/RR TRACK : 1220mm/1160mm
FRAME : Front and rear tubular space frame
FUEL SYSTEM : MegaSquirt 2
FUEL TYPE : Gasoline
MATERIAL : Carbon/Aluminium/SAE1035/4130
MPD : 10800rpm
MPT : 10300rpm
OLWH : 1388,6mm / 1196,3mm
SUSPENSION : Front Pull rod/ Rear Push Rod
TIRE : 20.5x7 and 20x7.5-13 R25B Hoosier
UNIQUE :
WEIGHT : 288kg
WHEELBASE : 1560mm

Brasil

14 California State University - Northridge
Matador Motorsports

Matador Motorsports is proud to unveil the 4th iteration of it's current vehicle design. For the 2017 season, the main focus was to minimize design changes to allow for a shorter manufacturing phase. Changes were based on feedback from the previous 2016 season competition. This will allow for more testing and validation of the vehicle while allowing the driver more seat time. The main changes for this season included better ergonomics, a simplified chassis and different manufacturing processes for our aerodynamic package.

Here at California State University, Northridge, the FSAE program is one of many capstone projects available through the department of Mechanical Engineering. This project requires the knowledge and theory gained from the mechanical engineering curriculum. Students work with state-of-the-art equipment to manufacture their designed components. This teaches them the benefits of simple practical designs and ease of manufacturing. Furthermore, the FSAE experience entails managing cost, fitting each individual's design into the overall assembly, and testing the components.

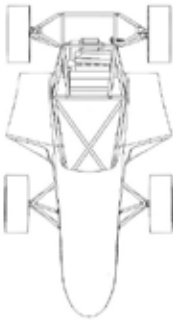


United States

BRAKE : 3 Wilwood GP-200 Calipers with floating 190.5mm cast iron durabar G2 rotors
BSCD : 100mm Bore / 62 mm Stroke / Single Cylinder / 488cc displacement
COOLING : Side mounted, Single core bar-and-plate aluminum radiator , 1100 cfm fan
DRIVE : Chain Drive
ELECTRONICS : Athena GET HPUH ECU, M40 GET Data logging system
ENGINE : Honda CRF450x
FR/RR TRACK : Front: 1295.4 mm (51 in.) / Rear: 1244.6 mm (49 in.)
FRAME : 4130 Chromoly Steel Space Frame
FUEL SYSTEM : OEM Honda Internal Fuel pump assembly, Deatschwerks 490cc injector
FUEL TYPE : 100 Octane
MATERIAL : 4130 Steel, 7075 Aluminum, Carbon fiber, Fiberglass
MPD : 50 HP (37.3 kW) @ 8,700 RPM
MPT : 37.1 ft-lbs (43 Nm) @ 4,500 RPM
OLWH : Length: 2575 mm, Width: 1512 mm, Height: 1200 mm
SUSPENSION : Double Unequal A-arm Push Rod Suspension
TIRE : 6.0/18.0-10 Hoosier R25B
UNIQUE : Carbon fiber wheels w/ center locking hubs, custom differential housing
WEIGHT : 475 lbs
WHEELBASE : 1562.1 mm (61.5 in.)

15 California Baptist University
CBU COE SAE Racing

The California Baptist University Formula SAE team is competing in Formula SAE Lincoln for the first time in the university's sixty-six-year history. Despite this being our inaugural year we intend to set high expectations for future CBU participation and performance. As a first-year team, there were two main objectives for the design of the vehicle. The first objective was safety. All components were designed with generous safety factors so that there would be minimal chance for driver injury. The second major objective was enough reliability to ensure that the vehicle would successfully complete all dynamic events at the competition.

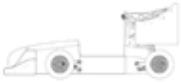


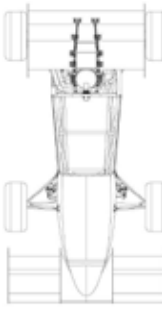
BRAKE : EBC USR Rotors, 1991 Mazda Miata Calipers, EBC Yellowstuff Brake Pads
BSCD : 67/42.5/4/599
COOLING : Side mounted duel core 4833 cm^3 radiator, 2350 cfm fan
DRIVE : Chain Drive
ELECTRONICS : OEM ECU, Power Commander, Auto-Tune
ENGINE : 2007 Suzuki GSX-R600
FR/RR TRACK : 1321/1315 (52/51.8)
FRAME : Steel Space Frame
FUEL SYSTEM : Student Fuel Tank, OEM injectors and sensors
FUEL TYPE : 93
MATERIAL : 1020, 4130, Fiberglass
MPD : 41 kW (11000)
MPT : 35 Nm (9000)
OLWH : 2900/114.2, 1560/61.4, 1346/53
SUSPENSION : Inboard Push Rod
TIRE : 20.0 x 8 - 13, R25B, Hoosier
UNIQUE : N/A
WEIGHT : 377 kg
WHEELBASE : 1588/62.5

United States

16 Arizona State University - Tempe
SunDevil Motorsports

Being a 3rd year team, Sun Devil Motorsports had a goal of building a car that was refined, light, and competitive. This resulted in going down from 13" to 10" wheels, reducing the chassis weight by ~20 lbs, and an Arizona State 1st: a completely student-designed Aerodynamics kit . Go Devils!





BRAKE : 4-wheel Disc brakes (Cast Iron)
BSCD : 67mm / 42.5mm / 4cyl / 599cc
COOLING : 2" Core Al radiator, rear mounted
DRIVE : chain drive
ELECTRONICS : PE3 ECU
ENGINE : F4i
FR/RR TRACK : 1321 mm/ 1321 mm
FRAME : 4130 Chromoly Steel Space Frame
FUEL SYSTEM : Electronic Fuel Injection
FUEL TYPE : 93 octane gasoline
MATERIAL : Carbon Fiber wings/ body panels
MPD : 9500 rpm
MPT : 9000 rpm
OLWH : 2800mm, 1422mm, 1178mm
SUSPENSION : Unequal length 4 arm, pull-rod
TIRE : Hoosier R25B; 18 x 6
UNIQUE :
WEIGHT : 625 lbs
WHEELBASE : 1575 mm

United States

17 Instituto Tecnologico de Chihuahua

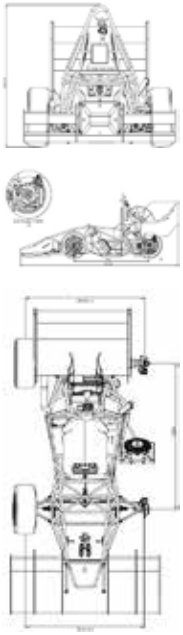
panteras racing team

As one of the most experimented teams around Formula SAE we know that almost all in competition depends about driver and car, more specific about car. At this time we're more than pleased to introduce our most powerful car and we think you'll love it...

With no more than 599cc its capabilities are compared to most powered teams, approaching to maximize its design and functionality powered by a Honda CBR600RR and testing on a redesign based on our experience due to its 22 years playing on Formula SAE.

We're enrolled to Lincoln but we're more than prepared for participate in Michigan.

Also we want to thank all our sponsors and family for their continued support.



Mexico

BRAKE : Tilton 75 Series, Wilwood PS1 Front/ Wilwood SC1 Rear
BSCD : 67/42.5/4/599
COOLING : Single Core Crossflow Double Pass Radiator/ Left Side Mounted
DRIVE : Chain Driven Zexel Torsen T1 Differential
ELECTRONICS : ECU Haltech Sport 1000
ENGINE : Honda CBR600RR 2008
FR/RR TRACK : 1219.2mm/ 1193.8mm
FRAME : Tubular Steel Spaceframe
FUEL SYSTEM : Electronic Fuel Injection
FUEL TYPE : 93 Octane
MATERIAL : AISI 4130 Chromoly Steel, Aluminum, Carbon Fiber, Mild Steel
MPD : 71.07HP @ 9000 RPM
MPT : 60.74N.m @ 6500-9000 RPM
OLWH : 3109mm/ 1351mm/ 1220mm
SUSPENSION : Double unequal A arms Push
TIRE : Hoosier 20.5X7.0-R13 R25B
UNIQUE : Anti-Roll Bar
WEIGHT : 660 lbs
WHEELBASE : 1524 mm

21 University of Saskatchewan
Huskie Formula Racing

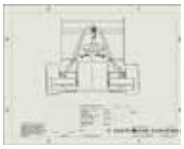
S12 is Huskie Formula Racing's all new car to compete in the Formula SAE series. S12 offers a complete redesign of the rear end of the vehicle with a goal of increasing drivetrain reliability as well as reducing the car's overall weight when compared to previous vehicles. The all new 4130 chromoly chassis integrates square tubing for the first time in an HFR racecar. The Honda CBR600 RR has been re-tuned to run on race gas, and a new resonator and muffler have been added to reduce overall noise. A second sidepod has been added to house the exhaust. An all new hand clutch and shifter have been designed to increase ergonomics and make the car easier to drive. A front anti-roll bar was added to improve cornering, and stiffer springs reduce body roll on tight corners.

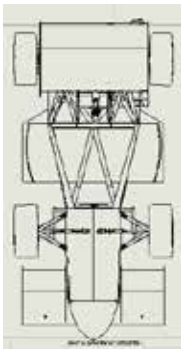
BRAKE : Floating Cast Iron Brake Discs, PS-1 Calipers
BSCD : 67mm/42.5mm/4cyl/600cc
COOLING : Custom Aluminum Radiator and Swirl Pot, 10" Electric Fan, Stock Water Pump
DRIVE : 520 Chain to Custom Torsen Differential
ELECTRONICS : AEM EMS4
ENGINE : Honda CBR600RR
FR/RR TRACK : 1295mm(51in)/1280mm(50in)
FRAME : 4130 Chromoly Space Frame
FUEL SYSTEM : Single Stage Injection, Non-Return
FUEL TYPE : 100 Octane
MATERIAL : Carbon Fibre Body
MPD : 10000
MPT : 8600
OLWH : 2813mm(111in),1504mm(59in),1201mm(47in)
SUSPENSION : Pull-Rod Front, Upright Mounted Push Rod Rear, Ohlins TTX25 Damper
TIRE : Hoosier (Hoser) 20.5x13.0x7.0 R25B
UNIQUE : Studded Tires for Maximum Ice Traction, Cup Holder
WEIGHT : 640 lbs
WHEELBASE : 1570mm/61.8in

22 University of Californnia - Irvine
UCI Racing

Codenamed "Mantis", UCI's 2017 FSAE car is a big step forward from last year's car. We have implemented a full carbon fiber body and aero package, a first in UCI Racing's history. Additional innovations include a 3D printed nylon intake manifold, optimized exhaust system, redesigned camshafts, and significantly improved suspension geometry.

This year's team is one of the most ambitious and determined groups UCI has ever seen. We would like to thank all of our sponsors, family, and friends for their incredibly generous support. Without you, we would not be able to implement the advanced designs we spent so long developing.





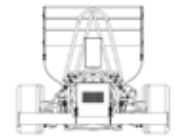
BRAKE : 4 wheel outboard disc, Wilwood PS1 Calipers
BSCD : 65.5mm x 44.5mm / 4 cyl / 600cc
COOLING : Water-cooled dual radiator
DRIVE : Chain driven, 3.2:1 final drive
ELECTRONICS : Stock ECU, Race Technology DL1
ENGINE : Yamaha R6
FR/RR TRACK : 1217mm / 1296mm
FRAME : 1020 DOM Steel Spaceframe
FUEL SYSTEM : Electronic Fuel Injection
FUEL TYPE : 100 Octane
MATERIAL : Carbon Fiber body
MPD : 12000
MPT : 7900
OLWH : 2540mm, 1446mm, 1219mm
SUSPENSION : Unequal length A-arm pushrod
TIRE : Hoosier 18x7.5-10 R25B
UNIQUE : First UCI FSAE car with aero
WEIGHT : 650lb
WHEELBASE : 1593mm

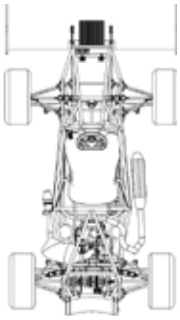
23 Texas A & M University - College Station

Texas Aggie Racing

The Texas A&M Formula SAE team has designed an all new car for the 2017 Lincoln competition. Reliability is the primary focus of the design followed by lap simulation-based performance requirements. The 2017 car is lightweight and simple thanks to its powerful single cylinder engine, efficient aerodynamics package, and direct acting spring and damper suspension system.

Texas A&M's team is comprised exclusively of senior-level students who participate in FSAE for capstone senior design credit. As such, none of the students have any previous experience designing or building an FSAE car, and the result is an all new car every year. Team members have a true appreciation for the fundamentals of engineering design as well as manufacturing. The team completed the car in March and has over 3 months of testing under their belt to ensure reliability during all dynamic events.





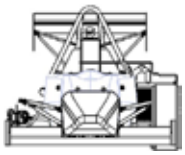
United States

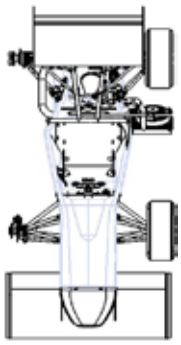
BRAKE : Front outboard discs, rear inboard disc, Brembo calipers
BSCD : 102 mm / 84.5 mm / 1 Cylinder / 690 cc
COOLING : Rear mounted aluminum radiator
DRIVE : 520 chain, drexler clutch type limited slip differential
ELECTRONICS : MoTeC M130, MoTeC C125
ENGINE : 2015 KTM 690
FR/RR TRACK : 1219 mm (48 in) / 1143 mm (45 in)
FRAME : 4130 steel tube space frame
FUEL SYSTEM : Aluminum tank, 725 cc injector, Yamaha WR450 fuel pump
FUEL TYPE : E85
MATERIAL : 4130 steel, carbon fiber, aluminum
MPD : 47.7 kW @ 7250 RPM
MPT : 67.8 Nm @ 5750 RPM
OLWH : 2794 mm (110 in) / 1443 mm (56.8 in) / 1194 mm (47 in)
SUSPENSION : SLA, direct actuated spring/damper, adjustable blade type anti-roll bar
TIRE : Hoosier 18.0 x 7.5 - 10 R25B or 6.0/18.0 - 10 LC0
UNIQUE :
WEIGHT : 540 lb
WHEELBASE : 60.25 in (1530 mm)

25 California Polytechnic State Univ-SLO
Cal Poly Racing

This year, the second year as a combined combustion and electric team, Cal Poly Racing features the CP17C for its combustion vehicle. The CP17C features a carbon fiber composite monocoque chassis, Yamaha YFZ450R single cylinder engine, and double-wishbone suspension. The monocoque chassis meets the team's chassis stiffness goal while achieving a light frame weight of about 64 pounds. The single cylinder motor is configured for predictable throttle response with minimal compromise to maximum power output. The vehicle uses 13' Keizer 4L wheels and Hoosier tires. The Hoosier tires enable the vehicle to achieve maximum lateral acceleration compared to other tire choices. Additionally, an aerodynamics package was implemented in order to take full advantage of the vehicle's powertrain. This is all coupled with a full data acquisition system in order to provide active vehicle information and tuning feedback.

We would like to thank our families, friends, school, and sponsors, especially Zodiac Aerospace, Stratasys, Henkel, TenCate, Next Intent, and ANSA Beta CAE Systems for making this vehicle possible!

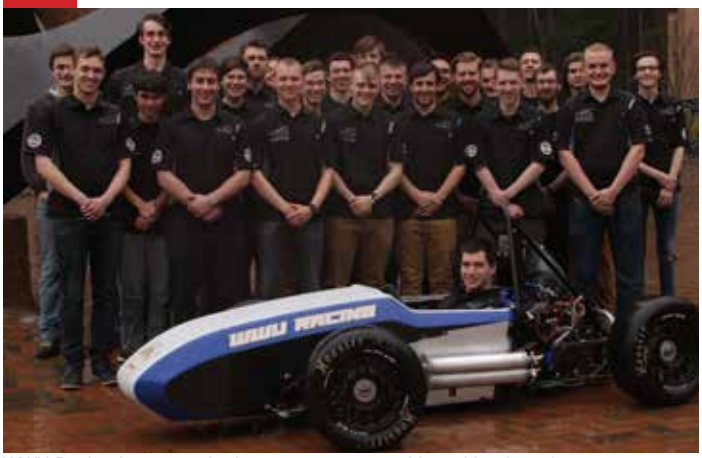




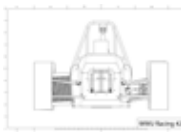
BRAKE : Dual Tilton MC, 4x Brembo calipers, floating ductile iron rotots
BSCD : 95mm/63.4mm/1cyl/449cc
COOLING : Single pass side mounted radiator with louvered core
DRIVE : Chain, Drexler LSD
ELECTRONICS : MoTec M400, MoTec ACL, custom CAN modules and power distribution module
ENGINE : Yamaha YFZ450R
FR/RR TRACK : 1194mm/47" Front, 1168mm/46" Rear
FRAME : CFRP Monocoque with Steel roll hoops
FUEL SYSTEM : 380cc/min 4 hole port injector
FUEL TYPE : 100 Octane
MATERIAL : Carbon-fiber prepreg, Aluminum honeycomb, 4130 steel
MPD : 9800 RPM
MPT : 7000 RPM
OLWH : 2894mm/114" L, 1380mm/54" W, 1150mm/45" H
SUSPENSION : Unequal-length A-arm, pullrod front/pushrod rear, boxed steel upright
TIRE : 13" Hoosier R25B
WEIGHT : w/150lb driver: 250kg/550lb
WHEELBASE : 1550mm/61"

United States

26 Western Washington University
WWU Racing



WWU Racing is very excited to return to competition with a brand new car construction. Viking 58 is an all new chassis configuration from our previous cars. Our goals for this year was to produce a car with a high level of reliability and quick transient stability. The chassis is a hybrid design; carbon monocoque and chromoly subframe in a lay-down configuration in order to reduce driver influence in aerodynamics. The engine is a Honda CBR600rr powerplant in stock configuration. This power unit allows for tight packaging capabilities as well as high power to weight ratio. The engine is dressed with a full carbon intake manifold designed using CFD and optimized with dynamic testing. On the other side, exhaust is passed through 4-2 equal length headers and into a full custom muffler. The muffler is an absorption style unit with shared twin chambers to aid in the cancellation of sound waves. Suspension features Db inline air shocks, which shave 9 pounds from the car in comparison to conventional spring/damper units. With many weeks of time allocated to heavy testing, we plan on arriving at competition with a well-sorted and capable vehicle.



BRAKE : Floating Cast Iron, Hub Mounted, 10" Dia
BSCD : 67mm/42.5mm/4/ 599cc
COOLING : Side Mounted Double Pass
DRIVE : Chain Drive to Torsen Differential
ELECTRONICS : DTA S80 Pro
ENGINE : 2008 Honda 600RR
FR/RR TRACK : (1270mm/50in)/(1187mm/45.75in)
FRAME : 3/5 Carbon Monocoque, 2/5 Steel
FUEL SYSTEM : Walbro 255, 210cc Prius Injectors
FUEL TYPE : 93 Octane
MATERIAL : Tyvex Arovex 250 Prepreg Carbon Fiber, Aramid/Nomex Honeycomb Core,4130 Rear
MPD : 77Hp @9600 RPM
MPT : 32 ft-lbs @8600 RPM
OLWH : (3310mm/130.3in),(1499mm/59in),(1152mm/45.3in)
SUSPENSION : Push/Pull Rod Actuated Air Dampers, Unequal Length A-Arms
TIRE : 13" Hoosier R25B
UNIQUE : Organic Shaped Full Carbon Intake Runners and Plenum, Exhaust Gas Diffuser
WEIGHT : 650lbs
WHEELBASE : 1600 mm/63 inches

United States

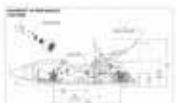
27 Virginia Commonwealth University
Formula SAE at VCU

This Formula SAE vehicle is the first one to roll out of Virginia Commonwealth University in the team's 17 year history and the engineering school's 20 year history. Featuring a 4130 steel spaceframe chassis, Honda CBR600 F4i engine, hand laid fiberglass body, and a standard FSAE 012000 Torsen differential, the design is meant to serve as a foundation for future FSAE-VCU teams by delivering a product that is functional and reliable. The car is not the pinnacle of cost efficiency, nor is it a featherweight or downforce monster, but it is still going to be competing on the same international stage with an entire collegiate team behind it. We hope that it allows spectators and other teams to once again see the roots of what makes not only constitutes an FSAE vehicle, but also an FSAE team.

BRAKE : Rear Miata Rotors (front), Single In-Board Rotor (rear)
BSCD : 67mm / 42.5mm / 4 Cyl. / 599cc
COOLING : Liquid
DRIVE : 525 Chain 012000 Torsen
ELECTRONICS : Megasquirt 3 w/ QuadSpark
ENGINE : Honda CBR600 F4i
FR/RR TRACK : 1270mm / 1270mm
FRAME : 4130 Steel Chromoly Spaceframe
FUEL SYSTEM : OEM
FUEL TYPE : 93 Octane
MATERIAL : 4130 Steel, 6061 Aluminum, 10 Oz. Fiberglass, 3K Carbon Fiber
MPD : 12,500
MPT : 10,500
OLWH : 2769mm x 1500mm x 1295mm
SUSPENSION : Double Wishbone, Push-Rod, 2.6K Springs, Tanner Racing G2 Shocks
TIRE : 20.5"x7.0"x13.0" Hoosier R25A
UNIQUE : First Car in 17 Years
WEIGHT : 680 lb.
WHEELBASE : 1625mm

28 University of New Mexico
LOBOmotorsports

The 2017 LOBOmotorsports vehicle utilizes innovative engineering design tools to build upon the highly accomplished LOBOmotorsports legacy. LMS-17 is the ideal competitive autocross car capable of suiting the most seasoned weekend autocross driver. It embodies excellence in engineering, design, and competitive racing. LMS-17 utilizes a turbocharged single-cylinder KTM 450 SX-F capable of producing up to 73 horsepower. Utilizing advanced composite materials in conjunction with high-strength lightweight alloy steels, the LMS-17 team has developed an efficient, strong, and lightweight frame and aerodynamic package. The LMS-17 vehicle features substantial ergonomics, safety features, and driver controls. Our suspension features a double wishbone design that utilizes both push and pull rods in order to improve packaging and on-track tuning capabilities. The LMS-17 team has successfully designed, manufactured, and tested a robust vehicle that has the capability of operating under various system limitations. This ultimately led to the successful realization of a high performing vehicle system that will ensure reliable performance at the 2017 Lincoln Formula SAE Competition.

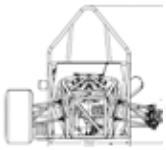


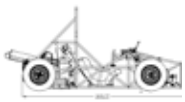
BRAKE : Cast Iron Rotors, Tilton 76-Series Master Cylinders, Wilwood PS1 C
BSCD : 95 mm/63.4 mm/1 cyl/449.3 cc
COOLING : Single Core Radiator
DRIVE : Manual 5-Speed Gearbox, Chain Drive with Rekluse Clutch
ELECTRONICS : Modular Wire Harness
ENGINE : KTM 450 SX-F
FR/RR TRACK : 1270 mm/1219 mm
FRAME : Welded Steel Spaceframe
FUEL SYSTEM : Fuel Injected
FUEL TYPE : E85
MATERIAL : AISI 4130 Chromoly Steel Frame, Carbon Fiber Aerodynamic Package
MPD : 73 HP @ 11,000 RPM
MPT : 52 Nm @ 7,000 RPM
OLWH : 3060 mm, 1499 mm, 1095 mm
SUSPENSION : In-Plane, Double Wishbone, Unequal Length A-Arm, Push/Pull Rod Actuated Spri
TIRE : 18.0 X 6.0 - 10 R25B Hoosier
UNIQUE : Turbocharged, Centrifugal Clutch, Adjustable Wing Element Angle of Attack
WEIGHT : 585 lbs
WHEELBASE : 1575 mm

United States

29 University of Houston - Houston
Cougar Racing

"Eddie" will be the second car built by Cougar Racing at the University of Houston. Last year we were able to complete the endurance event as a 1st-year team and we are ready to compete again. After reflecting on our first year at competition, we placed an emphasis on developing a grade A team before a grade A car. This goal is vital to our organization's future success. Furthermore, in order to become a more established team, we have improved in several aspects of the design process. These include integration, material selection, cost, and decision evaluation based on competition points. With our current progress, we hope to return every year with new improvements and greater achievements.





BRAKE : Wilwood GP200 Calipers, Cast Iron Rotors, Tilton 78 Series Master Cylinder
BSCD : 95mm/63.4mm/1-cylinder/449.3cc
COOLING : Left side mounted 208 x 304mm core Mishimoto radiator , fan cooling
DRIVE : Chain Driven, Automatic Torque Biasing Differention, RWD
ELECTRONICS : Custom PCB Board: GPS-HD Camera-Datalogger/KTM EFI Tuning Tool
ENGINE : 2015 KTM 450-SXF
FR/RR TRACK : 1193.8 mm/ 1168.4 mm
FRAME : Steel Spaceframe
FUEL SYSTEM : Keihin Engine Management System, Intake Runner mounted OEM Fuel Rail
FUEL TYPE : 93 Octane
MATERIAL : ASME SA513, 1026
MPD : 8000
MPT : 8500
OLWH : 2535mm, 1224 mm, 1148mm
SUSPENSION : Short/Long Arm, Pushrod, Coil Springs, Tubular Torsion Stabar
TIRE : 18 x 7.5 R10 Hoosier R25b
UNIQUE :
WEIGHT : 586.43 lbs
WHEELBASE : 1600 mm

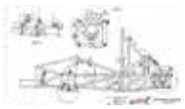
United States

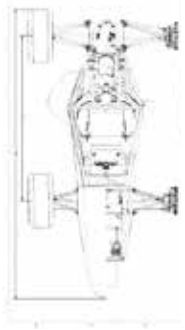
31 University of Alberta

University of Alberta Formula SAE

Augmenting our steel space frame this year, the team has built our 2017 chassis from the ground up utilizing ergonomic principals; designing a competitive car around an optimized driver cell. A reclined driving position and adjustable pedals keep the driver in an optimal position no matter their height, leading to a more comfortable car for a variety of body sizes. Front suspension dampers were placed under the nose of the car leaving room for an elevated foot and pedal position for the driver. Further refinement of our engine on our in-house dynamometer has proved reliability and performance and produced an optimized fuel map on our Haltech Elite ECU. Over all, these aspects create a worthy contender for competition.

BRAKE : AP Racing CP4226 Calipers, 25.4mm bore, ductile cast iron rotors
BSCD : 95mm/63.4mm/1/449cc
COOLING : 2 side mounted aluminum YZ450F radiators, no fans
DRIVE : 520 series chain with 11 and 46 tooth sprocket sizes



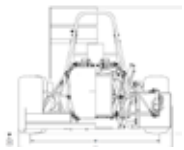


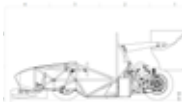
Canada

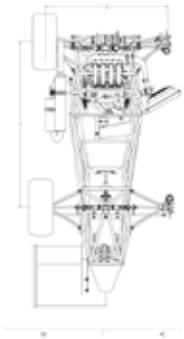
ELECTRONICS : Haltech Elite 1500
ENGINE : Yamaha WR450F
FR/RR TRACK : 1250mm/1245mm
FRAME : 4130 steel space frame
FUEL SYSTEM : Electronic Fuel Injection
FUEL TYPE : 100 Octane
MATERIAL : steel, aluminum, carbon fiber, ABS plastic
MPD : 34.1kW @10500rmm
MPT : 27.5Nm @7000rpm
OLWH : 2769mm/1476mm/1118mm
SUSPENSION : Double unequal length A-arms. Pull rod actuated
TIRE : 20.5x7.0x13 R25B Hoozier
UNIQUE : Custom data logger, Ergonomically designed, Driver physiology system
WEIGHT : 530.6lb
WHEELBASE : 1575mm

33 Concordia University
Concordia Formula Racing

CFR17 is the 7th vehicle produced by the modern era of Concordia Formula Racing. This vehicle was designed as an iteration of the CFR15 vehicle which competed at FSAE Michigan last summer. The primary goals for CFR17 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.







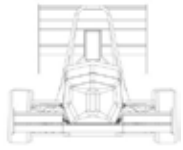
Canada

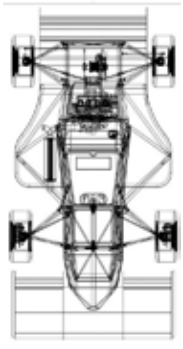
BRAKE : Wilwood GP200 Calipers, Composite Metallic Pads, Floating 4140 Steel Rotors
BSCD : 67mm / 42.5mm / 4 / 599cc
COOLING : Custom Aluminum Radiator, 1000CFM Thermo Fan, Swirl Pot
DRIVE : Chain Drive, Drexler Limited Slip Differential, Modified Shift Drum
ELECTRONICS : MoTec M150 ECU with Integrated Data Logging, GPS Telemetry, and 6-Axis IMU
ENGINE : Honda CBR600F4i
FR/RR TRACK : 1219mm / 1168mm (48in / 46in)
FRAME : 4130 Cromoly Steel Spaceframe
FUEL SYSTEM : Custom Fuel Rail, Stock Injectors, Aftermarket Regulator, 190 LPH Fuel Pump
FUEL TYPE : 93 Octane
MATERIAL : Carbon Fiber, 7075 Aluminum, 4130 Chromoly Steel
MPD : 82hp @ 10,500 RPM
MPT : 46lb-ft @ 7,000 RPM
OLWH : 2629mm 1340mm / 1151mm (103.5in / 52.75in / 45.3in)
SUSPENSION : Double Un-equal A-Arms, Inline Pushrod Actuation, Ohlins TTX25 MKII
TIRE : 20.5 x 7 x 13 Hoosier R25B
UNIQUE : Drag Reduction System, Pneumatic Shifting, Arduino Powered Dash
WEIGHT : 670lb
WHEELBASE : 1600mm / 63in

34 Oregon Institute of Technology
Oregon Tech Racing

Oregon Tech Racing is proud to present “Kendra” as our 2017 competitor. Also known as OTR F17, this year’s car features the design philosophy of “simplify and add lightness.” The result of this is a reliable car that accommodates a range of drivers’ abilities. A few of the design highlights include a steel spaceframe, GSXR 600 four cylinder, 10-inch wheels, mechanical shifting and a wing-only aero kit. To simplify the manufacturing process our machined aluminum uprights are universal across all four corners and both side pods come off of the same mold.

Special thanks to our sponsors for their continued support, this is all possible because of you.





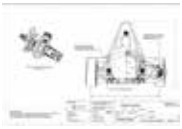
United States

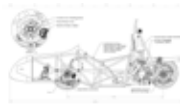
BRAKE : Twin Piston Wilwood calipers W/floating rotors front, single inboard rear
BSCD : 67mm/42.5mm/4/599cc
COOLING : Double pass sidepod mounted
DRIVE : 520 Chain, Drexler LSD
ELECTRONICS : PE3 ECU
ENGINE : '07 GSXR600
FR/RR TRACK : 50in/48in
FRAME : 4130 Spaceframe
FUEL SYSTEM : EFI in-tank regulated
FUEL TYPE : 93 Octane
MATERIAL : Hopes, dreams, and a positive can-do attitude
MPD : 10000
MPT : 8500
OLWH : 116in/58.75in/47.25in
SUSPENSION : SLA Push front Pull rear
TIRE : 18x7.5x10 R25B
UNIQUE :
WEIGHT : 600
WHEELBASE : 61.5in

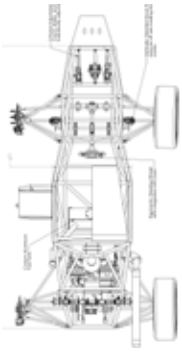
Information published as supplied by teams on or before April 10, 2017 with minimal editing.

35 Colorado School of Mines
CSM Formula

Continuing with a similar design language from previous iterations of the car, CSM Formula has continued to improve upon a formula that is highly competitive. This chassis (C005) was designed with increasing reliability, increasing tunability, and increasing design efficiency. The steel space frame is again 4130 steel tubing with significant changes to the drivers cell and rear suspension mounting that is meant to increase torsional rigidity and increase driver comfort and ability to operate the car. The suspension maintains a similar design with updated kinematics to better utilize the tires. Mass reduction in the suspension was also a main focus. The engine is still a CBR600RR with a custom wiring harness and PE3 ECU with updated fuel maps to utilize the square layout intake and equal length exhaust. The bodywork is carbon fiber with some considerations to aerodynamic effects taken in the shaping and aesthetics. Adjustability for the entire car has increased from the driver fitment, to suspension performance and engine adjustability.





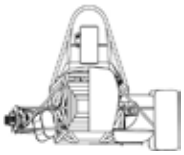


United States

BRAKE : Tilton Master Cylinders, Brembo Front Calipers, PS1 Rear Calipers
BSCD : 67 mm, 42.5 mm, 4, 599 cc
COOLING : Liquid
DRIVE : Chain driven RWD
ELECTRONICS : Custom DAQ, PE3 ECU
ENGINE : Honda CBR 600RR
FR/RR TRACK : 1245 mm / 1219 mm
FRAME : 4130 Steel Space Frame
FUEL SYSTEM : Sequential port fuel injection
FUEL TYPE : 93 octane
MATERIAL : Rich Mahogony
MPD : 63.38 kW @ 10000 rpm
MPT : 76 Nm @ 7000 rpm
OLWH : 2990 mm, 1458 mm, 1177 mm
SUSPENSION : Double unequal length A-arm
TIRE : 13" Hoosier R258
UNIQUE : Custom low-profile oil pan
WEIGHT : 650 lbs
WHEELBASE : 1626 mm

36 Wichita State University
Shocker Racing

The 2017 Shocker Racing Formula SAE car, or SR17, is the latest and most advanced car in the line of Shocker Racing vehicles that compete in the yearly FSAE competition in Lincoln, NE. Over the course of a year, the 23 student team engineered, designed, and fabricated over 1500 parts that constitutes SR17. Shocker Racing had 3 main overall goals to ensure that SR17 is the best car thus far. First the team focused on improving the reliability of the SR model so that it could complete all dynamic events. Second, the team reduced the weight of the car to a total 208kg wet. Third, the team wanted to increase low end drivability through drivetrain modifications. Special thanks to our sponsors Park Aerospace, FMI & Cox Machining, TW Metals, RapidPSI, Arconic, BG Products, The National Institute for Aviation Research, WSM Industries, and Associated Industires.



BRAKE : Tilton 77 Masters and Bias Bar, Prop. Valve, Wilwood GP200 Calipers
BSCD : 67mm, 42.5mm, 4 Cylinders, 599cc
COOLING : Ducati Multistrada Radiator, Twin Delta 120mm Fans on PWM
DRIVE : Internal 6-Speed Gear Box, Quaife ATB Differential
ELECTRONICS : Motec M130 ECU, PDM15, C125 Logger, Elec. Throttle/Shifting
ENGINE : Honda CBR600RR, High Compression Pistons
FR/RR TRACK : FR 1321mm (52") / RR 1219mm (48in)
FRAME : 4130 Chromoly Space Frame
FUEL SYSTEM : Honda, Type PGM-FI
FUEL TYPE : E85
MATERIAL : Carbon Fiber, Aramid, Steel, Aluminum
MPD : 11300 rpm
MPT : 8850 rpm
OLWH : 2736.9mm (107.8"), 1539.2mm (60.6"), 1079mm (42")
SUSPENSION : Unequal Length Double A-Arm, Push Rod Actuated, Coil Spring, Torsion ARB
TIRE : 18x7.5-10" Hoosier R25B
UNIQUE : Carbon/Aramid Composite Fuel Tank, Traction/Launch Control, Turbo Encabulator
WEIGHT : 600 lbs
WHEELBASE : 1575mm (62in)

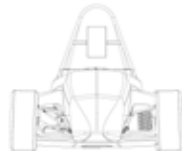
United States

40 University of Calgary
Schulich Racing

The University of Calgary Formula SAE team is proud to present the next vehicle in our team's legacy. Schulich Racing's ambitious nature has fostered innovations in safety, performance and reliability throughout its life. With a sized and experienced roster, the 2016-2017 team is determined to perform within the top 20 teams this year at Lincoln.

A strong team structure was implemented to manage over sixty students involved in the project this year. Students were divided into sub teams which included Business Development, Electrical, Frame and Body, Powertrain, and Suspension. Collaboration between each sub-team was the key to attaining our goals with this year's vehicle.

Schulich Racing's SR-18 has been designed with greater emphasis on data driven decisions using competition points structure analysis and lap time simulation to provide predictability in a competition setting. Key design changes include optimization of powertrain output, suspension traction characteristics, electrical harness and component reliability, and frame structure. A renewed focus on performance, efficiency, reliability, manufacturing, and testing drove the production of this year's vehicle.



BRAKE : Willwood Calipers, Four Outboard Floating Vented Rotors
BSCD : 67.0 mm/42.5 mm/4 Cylinders/599 cc
COOLING : Side Mounted, Alumnium Radiator w/ Fan
DRIVE : Chain Driven w/ Torsen LSd
ELECTRONICS : Hal-tech Elite 1500 ECu
ENGINE : Honda CBR600 F4i
FR/RR TRACK : 1092 mm/1100 mm
FRAME : Steel Tube Space Frame
FUEL SYSTEM : Honda/Bosch PGM-FI
FUEL TYPE : 93 RON Gasoline
MATERIAL : Steel, Aluminum, Carbon Fibre, Plastics, Titanium
MPD : 10000
MPT : 9000
OLWH : 2720 mm/1450 mm/1242 mm
SUSPENSION : Double Unequal Length Wishbone, Pushrod Actuated Outboard Dampers, Anti-roll
TIRE : Hoosier R25B 20.5x1-13
UNIQUE : Carbon Fibre Composites, 3D Printed Intake, Adjustable Pedal box
WEIGHT : 635 lbs
WHEELBASE : 1596 mm

Canada

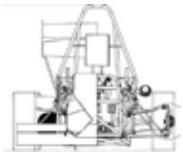
41 University of Colorado - Denver
Lynx Motorsports

The 2017 University of Colorado Denver Formula SAE team, Lynx Motorsports, is excited to be competing in its third year of competition. Lynx Motorsports is committed to a lightweight, cost efficient, ergonomic experience with a complete redesign from last year's car. The team decided to bring back the use of a 4 cylinder Honda CBR 600cc engine to accommodate adding a full wing package for the first time. The team is determined to compete in all dynamic events and provide a solid foundation for the future of Lynx Motorsports.

This year's team has been broken down into 6 sub teams to manage its 23 member roster including Chassis, Powertrain, Drivetrain, Driver Interface, Electronics, and Aerodynamics.

Extensive measures were taken to create a comfortable driving experience for all shapes and levels of drivers. Paddle shifters in conjunction with a head's up display were used for quicker shift times and real time data logging for driver training.

The 2017 Lynx Motorsports team would like to thank all of their sponsors for their continued support with this program including the countless hours from 3R Racing and faculty advisors.

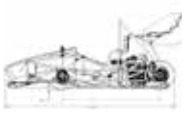


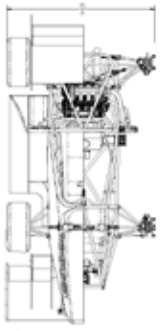
BRAKE : Front Outboard Brembo P34, Rear Inboard Brembo P30, w/Tilton 78 Series MC
BSCD : 67mm/42.5mm/4 cyl/599 CC
COOLING : Water-cooled, Single Core Aluminum Radiator w/8" fan
DRIVE : Chain Driven, Plate and Ramp LSD
ELECTRONICS : Motec M130, C125 Display
ENGINE : 2007 Honda CBR600RR
FR/RR TRACK : 52 in./48 in.
FRAME : 4130 Chromoly Steel Tube Space Frame
FUEL SYSTEM : Port Fuel Injected, Return Style
FUEL TYPE : E85 Ethanol
MATERIAL : Carbon Fiber, 4130 Chromoly Steel, Aluminum
MPD : 60 kW @ 9000 rpm
MPT : 78 N-m @ 9000 rpm
OLWH : 112.22 in./60.35 in./51.57 in.
SUSPENSION : Pushrod SLA Suspension w/Front Anti-Roll Bar
TIRE : Hoosier 20.5 x 7.0-13" R25B
UNIQUE : Electronic Shifting, Dual Element Wing Package, Adjustable Pedal-box
WEIGHT : 610 lb.
WHEELBASE : 62 in.

United States

42 Kennesaw State University
KSU Motorsports

KSU Motorsports has produced simple but unique racecars for 25 years under the names of Southern Poly University and Kennesaw State. Our design philosophy of delivering reliable, design for manufacture, driver friendly cars is made possible by careful packaging, low part count and multi-function parts. The KS-2 features a front and rear three element wing with a tunnel and flat-bottom undertray, which is the first aerodynamic system for our team. The KS-2 is the team's first car to move away from the K3 Suzuki GSXR platform, to a 2008 Yamaha YZF-R6 engine. The R6 allows for more efficient packaging which will significantly reduce the yaw moment of inertia for the KS-2. KSU Motorsports is a team of incredible students who are dedicated to maintaining the success of this program through continued community outreach while also providing invaluable hands-on experience to our members. It has been an absolute pleasure to work with you all this season, and I will never forget the sacrifices you all have made to keep our team alive. Thank you for your endless dedication, it has been truly inspiring and I have really enjoyed watching you all grow into the amazing people you are today.



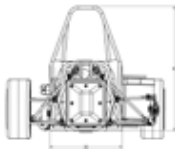


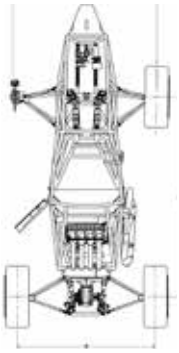
BRAKE : 3 Rotor Design, Rear Floating Rotor
BSCD : 69.0 / 42.5 / 4 / 636cc
COOLING : Side mounted dual raditators with 440 CFM shrouded fans attached to back
DRIVE : Chain driven sprocket design, with carbon fiber spool type differential
ELECTRONICS : Megasquirt MS3 Pro
ENGINE : 2008 Yamaha YZF-R6
FR/RR TRACK : 47.7 / 47.7 in.
FRAME : 4130 Chromoly Spaceframe
FUEL SYSTEM : Stock fuel pump, regulators and injectors
FUEL TYPE : 93 Octane
MATERIAL : Aluminum, Steel, Carbon Fiber
MPD : 14400
MPT : 11600
OLWH : 104 / 56 / 46.8 in.
SUSPENSION : Fox Float Shocks, 4-way adjustable dampers
TIRE : Hoosier LCO 18x6.0-10
UNIQUE : Rear-view camera and cup holder
WEIGHT : 579lbs
WHEELBASE : 60.5 in.

United States

43 Syracuse University
Citrus Racing at Syracuse University

CR2 is the second Citrus Racing vehicle. Each system was completely redesigned with the intent to unify the driver and vehicle as a single entity. This was specifically considered in CR2's control systems and the vehicle's response to demands in acceleration and deceleration linearly and laterally. Updated suspension and steering geometry allow the driver to get the most out of the tires while enabling precise control and adequate feedback. Improved pedal design enables the finesse required to control engine and braking power with the functionality needed to snap on and off when necessary. This harmonizes with the reconfiguration of intake and exhaust system parameters which bring the engine performance curve closer to satisfying the demands of an autocross. A new shifter allows quick and accurate selection of gears with an integrated clutch making rev match downshifting a seamless effort. Upgraded fuel, cooling, lubrication and electrical systems, enhance the reliability of the and capable driver time. All of this is tied together with a new chassis, designed in accordance with packaging these systems and a comfortable driver.





BRAKE : Wilwood G200 Calipers, MCP master cylinders, steel free float brake rotors
BSCD : 67mm/42.5mm/4/599cc
COOLING : Water cooled, mechanical pump, aluminum radiator
DRIVE : Close Ratio Dog Box, Chain Drive, Limited Slip Diff
ELECTRONICS : MoTeC M130, AiM DAQ
ENGINE : Suzuki GSX-R 600 K6
FR/RR TRACK : 1270/50, 1219/48
FRAME : Steel Space Frame, Big Welded
FUEL SYSTEM : EFI
FUEL TYPE : 93 Octane
MATERIAL : 4130 Chassis, 7075 Aluminum Uprights, Carbon Fiber/Fiberglass paneling
MPD : 10,000
MPT : 8,250
OLWH : 2743/180, 1379/54, 1168/46
SUSPENSION : Double Unequal Length A-Arm, Pushrod, Penske 7800 Shocks
TIRE : 20.5 x 7 Hoosier R25 B
UNIQUE : Adjustable Anti/Roll Center, Fits in the back of a pick-up truck
WEIGHT : 700 lbs
WHEELBASE : 1701/67

United States

44 University of North Dakota
UND FSAE

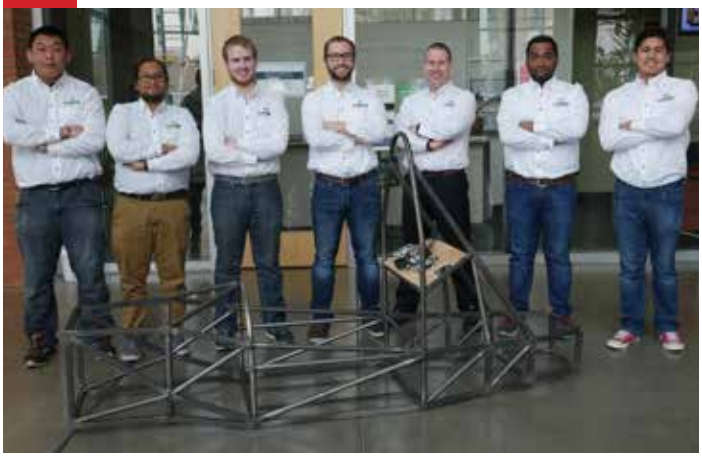
Hoping to capitalize on a successful 2016 season at the Lincoln competition, the UND FSAE team focused on refining the car for the 2017 competition. Our main goals were to improve select components of the car, reduce weight, and promote underclassmen involvement in the project. Some of our most significant areas of improvement are the implementation of a limited slip differential and anti-sway bars, as well as a complete redesign of the cooling and steering system. In addition to these improvements, many other changes were made throughout the car, and as a result the overall performance of the car has been improved, as well has a significant reduction in weight. In addition, the team also experienced a record number of student involvement this year, which has significantly contributed to the progress made on this year's car.

This year's team would like to thank all our friends, family, and sponsors for their continued support!

BRAKE : Wilwood PS-1 Calipers, Hub Mounted Rotors
BSCD : 67.0 mm, 42.5 mm, 4, 599 cc
COOLING : Rear Mounted, Single Core, Dual-pass Aluminum Radiator
DRIVE : Chain driven Drexler Differential
ELECTRONICS : Haltec PS1000 ECU
ENGINE : CBR 600 F4i
FR/RR TRACK : 47.32 / 47.32
FRAME : 4130 Steel Space Frame
FUEL SYSTEM : Haltec PS1000, Sequential Fuel Injection
FUEL TYPE : 93 Octane
MATERIAL : 4130 Steel, Carbon Fiber, 6061 Al
MPD : 8500
MPT : 8500
OLWH : 104, 54, 50.5
SUSPENSION : Double unequal length A-arm
TIRE : Hoosier 20.5 x 7.0-13, R25B
UNIQUE : Rapid Prototype Intake
WEIGHT : 637
WHEELBASE : 61.03

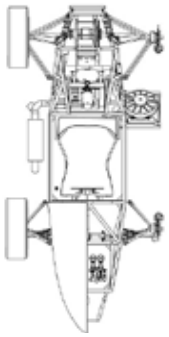
United States

45 Portland State University
Viking Motorsports



Viking Motorsports is proud to present VMS-08, Portland State University's entry into the 2017 Lincoln Competition. The car is a whole new design that showed major improvements over our last combustion car. Improvements in suspension, chassis, electronics, steering, and differential support showed a positive outcome for the goals our team set. With a strong emphasis on reliability and drivability, the new platform serves as a solid baseline for future development and testing.

With our small team, we were able to create the most advanced and sophisticated car our team has designed. Thanks to our sponsors and advisers for the support, as this would not have been possible.



BRAKE : Floating Rotors, Sintered Pads, Brembo Calipers, Wilwood MC
BSCD : 67mm / 42.5mm / 4 Cyl / 599cc
COOLING : Side Mounted Single Core Radiator w/ 10in Fan
DRIVE : 520 Chain Drive, Taylor Race Quaife Differential
ELECTRONICS : Haltech Elite 1500 w/CAN Expansion, PDM60
ENGINE : Honda CBR 600 F4i
FR/RR TRACK : 1245mm (49in) / 1270mm (50in)
FRAME : Space Frame
FUEL SYSTEM : Sequential EFI
FUEL TYPE : E-85
MATERIAL : 4130 Steel
MPD : 80 hp (10000 rpm)
MPT : 40 ft-lb (9000 rpm)
OLWH : 2820mm (111in), 1448mm (57in), 1295mm (51in)
SUSPENSION : Unequal Length A-Arms
TIRE : 20.5x7.0-13 Hoosier R25B
UNIQUE : Launch Control, Traction Control, Wireless Telemetry, Flex Fuel
WEIGHT : 650 lbs
WHEELBASE : 1654mm / 65in

United States

46 University of Texas - San Antonio
Roadrunner Racing

For the 2017 competition year, Formula SAE at the University of Texas at San Antonio improved on the systems from the previous year, continuing the design philosophy of minimalism that suits the strength of a team as a whole. With that said, our philosophy encompasses the idea of "minimal and powerful," which does not translate into cut corners, but, rather, utilizes resourcefulness. Refinements were made with a focus on reducing weight, increasing power, improving drivability, and ensuring reliability.

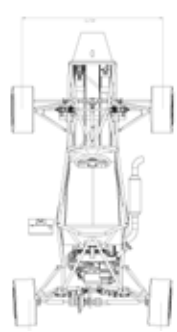
Our unique vehicle design, utilizing a rear 4-link dead axle beam and front swing arm suspension, single cylinder 450cc powertrain, and upright seating position embodies our desire to try something new, stand out from the field, and climb to the top.

BRAKE : Front: Outboard; Rear: Single Inboard
BSCD : 96 mm/62.1 mm/1/449 cc
COOLING : Water cooled, mechanical pump
DRIVE : Rear wheel chain drive with limited slip differential
ELECTRONICS : AEM Infinity 6 EMS
ENGINE : KFX450R
FR/RR TRACK : 1270 mm/50 in, 1270 mm/ 50 in
FRAME : Mild steel space frame
FUEL SYSTEM : Electronic fuel injection
FUEL TYPE : 93 octane
MATERIAL : Steel
MPD : 53 hp @ 10250 rpm
MPT : 28.5 lb.ft @ 7476 rpm
OLWH : 2510 mm/98.8 in, 1778 mm/70 in, 1169 mm/46 in
SUSPENSION : Rear: 4-link dead axle beam; Front: Short View Swing Arm
TIRE : 18x7.5-10 Hoosier R25B
UNIQUE : Electro-Pneumatic Shifter
WEIGHT : 525
WHEELBASE : 1575 mm/62 in

United States

47 University of Louisville
Speed FSAE

The 2017 Speed FSAE competition entry marks the team's second year. The primary focus on improvements for this year were manufacturing and fabrication as well as reduction of mass and rotational inertia.



BRAKE : Tilton 78 MC, Wilwood PS-1 Calipers, Outboard InFloating Cast Iron Rotors
BSCD : 67 mm/42.5 mm/4/599 cc
COOLING : Single Core 2 Pass w/ 950 cfm fan
DRIVE : Chain Drive with Clutch LSD
ELECTRONICS : Performance Electronics PE3
ENGINE : Honda CBR600RR
FR/RR TRACK : 48 in/46.5 in
FRAME : Steel Space Frame
FUEL SYSTEM : Honda Port Injection
FUEL TYPE : 93 Octane
MATERIAL : 1020 Carbon Steel
MPD : 9,000 rpm
MPT : 8,500 rpm
OLWH : 109 in/54.7 in/49.5 in
SUSPENSION : Double A-arm Pushrod
TIRE : Avon 16x6.0-10
UNIQUE : Independently Adjustable Pedals
WEIGHT : 570 lb w/ 150 lb driver
WHEELBASE : 66.5 in

United States

Information published as supplied by teams on or before April 10, 2017 with minimal editing.

49 Southern Methodist University
Hilltop Motorsports

The 2017 Southern Methodist University SAE Team is competing in Formula SAE, Lincoln, for the second year ever. Our 2016 FSAE car was bulky and hard to steer. In Lincoln, we also suffered a catastrophic breakdown when the front right wheel came free from the wheel hub during the endurance trial. For the reasons listed above, reliability, drivability, and weight reduction were chosen as the specific areas of improvement for the car build this year. The design goals for this years car are as follows, RELIABILITY: The vehicle must complete all events while still placing in the top 50 percent at Formula SAE Lincoln. DRIVABILITY: The steering and suspension geometry will be changed to provide the driver with a predictable, easy to drive car. WEIGHT REDUCTION: The vehicle target weight is 500 lbs. This is a 140 lb improvement over the 2016 FSAE car.

BRAKE : Wilwood GP320 calipers
BSCD : 76/49.6/3/675
COOLING : Triumph OEM radiator with electric water pump
DRIVE : Chain driven to rear torsen differential
ELECTRONICS : Triumph OEM ECU with Bazzaz fuel controller. AIM EVO3 datalogging
ENGINE : Triumph Daytona 675
FR/RR TRACK : 1321/1245
FRAME : MIG welded Chromolly tubing
FUEL SYSTEM : Triumph OEM fuel rail. External fuel pump
FUEL TYPE : 100 Octane
MATERIAL : Aluminum, Steel, Magnesium, Fiberglass, Carbon Fiber, Plastic
MPD : 85 (@11500 RPM)
MPT : 40 (@10000 RPM)
OLWH : 2810
SUSPENSION : 4 wheel independent double A arm push rod suspension
TIRE : 20.5x7-13 R25B Hoosier
UNIQUE : All Aluminum rear subframe
WEIGHT : 660 lb
WHEELBASE : 1550

United States

51 University of Calif - Berkeley
Berkeley Formula Racing

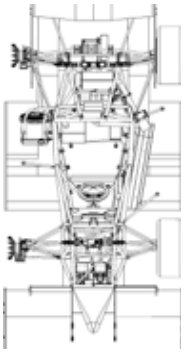
We are excited to introduce our 2017 FSAE car, B17. Our team of 60 undergraduates have been hard at work designing, building, and testing B17 at our garage in Richmond, CA. We have made a number of key design decisions to ensure we finish strong at Lincoln 2017.

Our focus for the 2017 season was to develop a well-understood out vehicle that is simple and reliable so we can test, tune, and validate throughout the spring. Our aerodynamics and engine package incorporate a number of new components for our team, including paddle shifting, ETC, and an undertray.

Our team is happy to work with other FSAE teams and welcomes design questions and tours of our facilities! If you would like to reach out, please contact our Team Principal, Matthew Eliceiri, at meliceiri@berkeley.edu or send a general inquiry to fsae@me.berkeley.edu.

We'd like to thank our sponsors and mentors for all their support and we wish the best of luck to all the teams this year! Be sure to check us out on the web and like us on Facebook.

Go Bears! Web: fsae.berkeley.edu • Facebook: UC Berkeley FSAE



BRAKE : Cast Iron Rotors, Outboard Wilwood Calipers, Adj Pedal Tray
BSCD : 88/57.5/1/350
COOLING : Water Cooled w/ Fan Assisted Side Mount Radiator
DRIVE : 520 Chain Drive, Drexler LSD, Steel Half-shafts, 3-Speed Sequential
ELECTRONICS : MoTeC M400, ADL2, Shorai Li-Ion, Magic Pixies
ENGINE : KTM350 SX-F
FR/RR TRACK : F: 47 in R: 47 in
FRAME : 4130 Spaceship Frame, TIG Welded w/ Superglue
FUEL SYSTEM : Direct Port Nitro Injection
FUEL TYPE : Top Fuel Nitro Methane
MATERIAL : Costco Pizza Boxes
MPD : 44 BHP @ 9500 RPM
MPT : 26 lb-ft @ 7500 RPM
OLWH : L: 115 in W: 57 in H: 47 in
SUSPENSION : Pushrod Actuated Front Monoshock, Pushrod Actuated Rear Dual Shock, ARBs
TIRE : 7.5/18-10 R25B HOOSURES BRO
UNIQUE : 3D Rear Wing, Undertray, ETC, Electro-Pneumatic Flappy Paddle Shifter
WEIGHT : 520 lbs
WHEELBASE : 60 in

United States

53 University of North Texas
Mean Green Racing

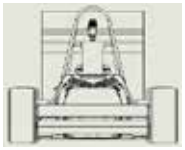
Mean Green Racing has worked hard this year to continue the success of our 2016 race season. MGR17 iterates some designs from past years along with new designs and some firsts for our team. We aimed at building a solid car to again make it through all events and come out with a solid place in 2017. A focus on driver feedback and learning from mistakes last year has allowed us to build a car that we think can help achieve this goal.

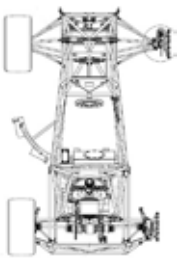
BRAKE : Brembo P34G Calipers, 4130 - Floating 4130 rotors
BSCD : 2.6 in. bore/ 1.7 in stroke/ 4 cyl/ 599 cc
COOLING : Sidepod mounted, custom aluminum radiator
DRIVE : Taylor Racing MK2 differential and half-shafts with custom tripod housings
ELECTRONICS : Performance Electronics PE3
ENGINE : Honda CBR600 F4i
FR/RR TRACK : 50" front/48" rear
FRAME : 4130 Steel Space Frame
FUEL SYSTEM : Stock fuel rail, Stock Injectors, and bosch fuel pump
FUEL TYPE :
MATERIAL : 4130 Steel, Carbon Fiber, and Aluminum
MPD : 10,500
MPT : 7500
OLWH : 117 in, 57.6 in, 45.6 in
SUSPENSION : SLA, Pullrod Actuated Spring/Damper, Adjustable Anti-Roll Bars (Blade-type
TIRE : Hoosier 20.5" x 7" x 13" R25B
UNIQUE : 3D Printed Intake (Ultem 9085)
WEIGHT : 600 lbs
WHEELBASE : 63 in

United States

54 University of Calif - San Diego
Triton Racing

Triton Racing's TR-16s builds upon a promising showing from TR-15 and features numerous improvements. Our efficient and reliable powertrain, full aerodynamics package and De Dion type dependent rear suspension are joined by evolutions such as 7% shorter wheelbase, lighter frame, topology optimized rear uprights and bellcranks, and much more. Reduced weight by 30+ pounds and ergonomics improvements in a smaller package result in driver comfort and improved performance on twisty tracks. With an increased amount of testing time relative to previous entries, TR-16s is Triton Racing's most competitive car to date.





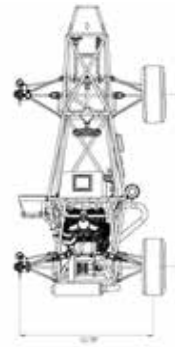
BRAKE : Wilwood calipers; outboard front, inboard rear
BSCD : 65.5mm/44.5mm/4/600cc
COOLING : Single aluminum radiator with 2 fans
DRIVE : Chain driven Quaife differential
ELECTRONICS : OEM ECU with piggyback Powercommander
ENGINE : Yamaha FZ6R
FR/RR TRACK : F: 1270mm/50in, R: 1219mm/48in
FRAME : 4130 Steel Frame
FUEL SYSTEM : EFI
FUEL TYPE : 93 Octane
MATERIAL : Large variety
MPD : 84 hp @ 9900 RPM
MPT : 52 ft-lb @ 6800 RPM
OLWH : Length: 3023mm/119in, Width: 1498mm/59in, Height: 1220mm/48in
SUSPENSION : Front Double Wishbone, Rear de Dion, Pushrod actuated
TIRE : Front: 20.0x7.5-13 Rear: 20.0x7.5-13, R25B
UNIQUE : de Dion rear suspension, unsprung aero, Watt's linkage
WEIGHT : 650 lbs
WHEELBASE : 1651mm/65in

United States

55 California State University - Sacramento
Hornet Racing

Hornet Racing is a student organization at California State University, Sacramento dedicated to developing professional engineering and business skills through the management of a competitive race team. Following an iterative process into the 2017 competition year Hornet Racing set its sights on improving reliability, drivability, serviceability, and testing efficiency.

Hornet Racing would like to thank all of its sponsors and supporters for their help, involvement, and encouragement.



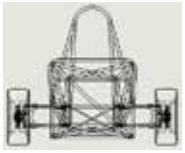
BRAKE : AP Raicng master cylinders, Brembo brake calipers, floating rotor design
BSCD : 37.5mm/ 42.5mm/ 4 cylinders/ 599 cc
COOLING : Side mounted radiator, Electric fan and water pump
DRIVE : Chain driven Drexler LSD
ELECTRONICS : Megasquirt MS3 ECU, Rowe Electronics PDM60
ENGINE : Honda CBR600RR
FR/RR TRACK : 1220 mm Front and Rear
FRAME : Steel Tubular Space Frame
FUEL SYSTEM : Honda CBR fuel rail, Custom fuel tank
FUEL TYPE : 93 Octane
MATERIAL : Hella
MPD : 8500
MPT : 8500
OLWH : 2704 mm, 1308 mm, 1237 mm
SUSPENSION : Dual Unequal length A-Arm, Push/ Pullrod-actuated spring/damper
TIRE : 20.5 x 7.0 - 13 R25B Hoosier
UNIQUE : Mig Welds
WEIGHT : 283.5 kg
WHEELBASE : 1590 mm

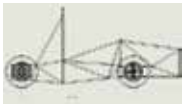
United States

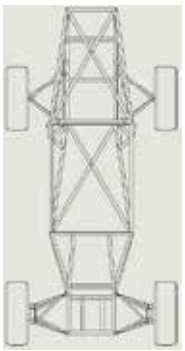
56 Oklahoma State University
OKState Racing

The OSR1 is OKState Racing's most reliable and highest performing car to date. Our new design philosophies combined with our increased focus on testing has allowed the OSR1 to achieve high levels of performance. Most of the designs for the OSR1 have been redesigned with reliability and ease of manufacturing in mind.

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







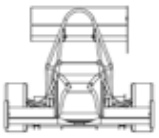
BRAKE : Wilwood calipers
BSCD : 95/63.4/1/449cc
COOLING : Single side mounted radiator with fan
DRIVE : Quaife-LSD Taylor Race Differential
ELECTRONICS : PE3 ECU, RaceCapture/Pro 2
ENGINE : YFZ-450r
FR/RR TRACK : 1219 mm/ 1219 mm
FRAME : Spaceframe
FUEL SYSTEM : Fuel injection
FUEL TYPE : 93 Octane
MATERIAL : 4130 Chromoly Steel
MPD : 45 HP at 9000 rpm
MPT : 35 ft-lbs at 5000 rpm
OLWH : 2514 mm, 1403 mm, 1141 mm
SUSPENSION : Double unequal length A-arms, push rod actuated
TIRE : Hoosier 18.0x6-10 R25B
UNIQUE : Custom seat and paddle shifters
WEIGHT : 530 lbs
WHEELBASE : 1575 mm

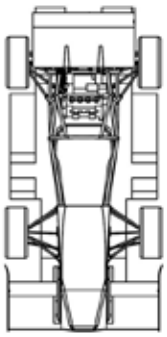
United States

57 North Carolina State University - Raleigh
Wolfpack Motorsports

Wolfpack Motorsports would like to present WMF-17. This year's car features an optimized tubular steel space frame chassis. Our suspension features an all new carbon-fiber tube construction. The aero package is more aggressive than last year's, adding more downforce. The car features a new custom steering rack, custom carbon fiber steering wheel, and electronic shifting. The car is powered by a Honda CBR 600 F4i motor with custom intake and exhaust systems. The car also features a dual radiator setup thanks to AKG.

We would like to thank NC State, RCR, B/E Aerospace, Digital Design, and Hydro Tube for all the support this year.



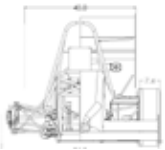


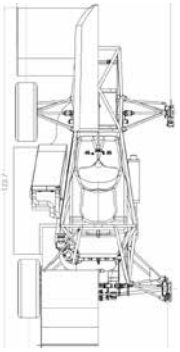
BRAKE : AP Racing Calipers, Tilton Master Cylinders, Floating Rotor
BSCD : 66mm/43mm/4cyl/599cc
COOLING : Dual side mount radiators
DRIVE : Chain
ELECTRONICS : MoTeC M400 and ADL
ENGINE : Honda CBR 600 F4i
FR/RR TRACK : 48.2/48 (inches)
FRAME : Tubular steel spaceframe
FUEL SYSTEM : Fuel injection
FUEL TYPE : 100 Octane
MATERIAL : 4130 chromoly steel
MPD : 84.7 hp @ 10500 rpm
MPT : 44.8 ft-lb @ 9000 rpm
OLWH : 116.8/56.4/43.7 (inches)
SUSPENSION : Unequal length composite A-Arms, Pullrod Front, Pushrod Rear
TIRE : 18.0" X 6.0" Hoosier LCO
UNIQUE :
WEIGHT : 600 lb w/ 150 lb driver
WHEELBASE : 61 (inches)

United States

58 University of Southern California
USC Racing

USC Racing's 2017 vehicle builds upon past successes. We've retained our core package: a Chromoly space frame, Yamaha R6-based powertrain, 13" wheel package, and full carbon fiber Aero package. The car has a variety of improvements that increase reliability and performance. A refined electronics package based around the PE3 ECU features advanced data acquisition and wireless telemetry capabilities to improve our testing capabilities. The 3D-printed air intake has been optimized for significant top-end power gains. The Aero package has been streamlined for weight savings, durability, and improved aerodynamic efficiency, with brand new front wing and undertray designs. USC Racing is excited to compete with our best car ever this year at Lincoln.



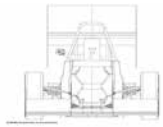


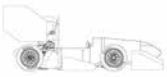
BRAKE : Wilwood PS1 calipers, Custom 4130 Floating Rotors
BSCD : 65.5/44.5 mm, 4 Cylinder, 600cc
COOLING : Custom Double Pass Radiator w/ Electric Pump
DRIVE : 520 Chain Drive w/ Drexler LSD
ELECTRONICS : PE3 ECU w/ AiM Sports DAQ
ENGINE : Yamaha R6s
FR/RR TRACK : 1270/1219 (mm)
FRAME : Space Frame
FUEL SYSTEM : Digital Fuel Injection
FUEL TYPE : 93 Octane Gasoline
MATERIAL : 4130 Chromoly Steel
MPD : 59.7 kW (13,000 rpm)
MPT : 54.2 N-m (9,000 rpm)
OLWH : 2862, 1524, 1200 (mm)
SUSPENSION : Unequal, nonparallel, double A-arms; push/pull-rod actuated
TIRE : Hoosier R25b, 20.5" dia., 7" width
UNIQUE : Wireless Trackside Telemetry
WEIGHT : 646 lb
WHEELBASE : 1575 (mm)

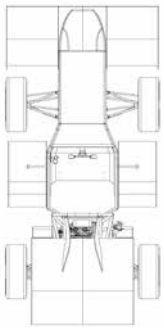
United States

61 California State University - Fullerton
Titan Racing

Titan Racing has elected to effectively develop a clean sheet vehicle design for the 2017 year and beyond. The team has chosen to take advantage of the increased engine displacement limit by utilizing the Yamaha FZ-07 in order to develop a vehicle that is reliable and drivable for the amateur racer. An updated carbon fiber driver cell is incorporated into the design with revised suspension geometry. The factor that governs the majority of our design decisions is a conservative fatigue life to increase longevity and reliability. Upgrades are made to key components to decrease weight and improve lateral acceleration, including a structural nosecone, CFRP wheel barrels, and side aerodynamic elements. Titan Racing is committed to a multi-year program developing a data acquisition system to implement data driven designs to continually iterate our vehicle.





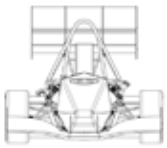


BRAKE : Floating Ductile Iron Rotors/Tilton 77-Series/ Wilwood PS-1
BSCD : 88mm/68.6mm/2cyl/689cc
COOLING : Dual Side Mounted 1" Core 16 Row Radiator, Series
DRIVE : 520 Chain Drive/Drexler LSD
ELECTRONICS : PE3 Engine Control Unit/Race Capture Pro2
ENGINE : 2015 Yamaha FZ-07
FR/RR TRACK : 1270mm/1270mm
FRAME : Carbon Fiber Driver Cell, Steel Rear Frame
FUEL SYSTEM : Injection, Custom Return
FUEL TYPE : 93 Octane
MATERIAL : M46J/MTM45-1 PW/UD CFRP, 4130 Steel, 6061/7075 Aluminum, 6AL-4V Titanium
MPD : 38.9kW @ 9000rpm
MPT : 60Nm @ 6600rpm
OLWH : 3052mm/1467mm/1245mm
SUSPENSION : Unequal/Non-Parallel Double Wishbone, Push/Pull Rod Actuated
TIRE : Hoosier 20.5x7.0x13 R25B
UNIQUE : Structural Nosecone/MSHD Aerofoils
WEIGHT : 268kg
WHEELBASE : 1600mm

United States

62 University of Oklahoma
Sooner Racing Team

Sooner Racing team's 2017 FSAE Lincoln entry offers a low CG augmented aero-dynamic package and KTM 690 Duke engine. With a only 370 pounds and broad torque band, a nimble and responsive vehicle is guaranteed.

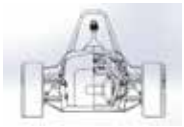


BRAKE : 4 outboard floating rotors, AP Racing Calipers
BSCD : 102 mm/84.5 mm/1 cyl/69 centiliter
COOLING : Stock KTM 690 Radiator, Spal Fan
DRIVE : Chain-driven Drexler LSD
ELECTRONICS : Motec and custom relay box
ENGINE : '15 KTM 690 Duke
FR/RR TRACK : 45.5 in/45.5 in
FRAME : 4130 Steel Space Frame
FUEL SYSTEM : Return style, internal pump
FUEL TYPE : 93 Octane
MATERIAL : Carbon Fiber, Aluminum, Steel
MPD : 8000
MPT : 6500
OLWH : 109.78 in, 53.49 in, 46.64 in
SUSPENSION : Double A-Arm, pushrod
TIRE : LC0 6.0/18.0-10
UNIQUE :
WEIGHT : 370 lb
WHEELBASE : 62.5 in

United States

63 IPN Esime Zacatenco
IPN Racing Team

For this year, IPN Racing Team presents the IPNRT-017, a proudly Mexican engineering piece that integrates unique details such as the hand-made carbon fiber collector or braid harness, among others.After a long process of research and development, the design was improved and thought to squeeze all the power of our engine. A car that will challenge the skills of any driver, without compromising the pleasure of driving it. The IPN Racing Team has put its heart in the creation of this car; We thank all those who made it possible.

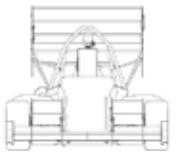


BRAKE : Four wheel disc brake
BSCD : 67.0 mm/42.5 mm/4 Cylinders/600 cc
COOLING : Water Cooled
DRIVE : Chain
ELECTRONICS : AEM Infinity 6 ECU
ENGINE : IC
FR/RR TRACK : 1300/1300 mm
FRAME : Tubular Spaceframe (Steel Alloy 4130)
FUEL SYSTEM : Low pressure multi point fuel injection
FUEL TYPE : Gasoline 91 Octane
MATERIAL : Chromoly Steel, Carbon Fiber Reinforced Plastic
MPD :
MPT :
OLWH :
SUSPENSION : Öhlins TTX25 Push Rod Front and Rear Suspension
TIRE :
UNIQUE : Carbon Fiber Construction Intake
WEIGHT :
WHEELBASE : 1657 mm

Mexico

65 University of Texas - Arlington
UTA Racing

UTA's 2017 entry, F-17 was based on the successes of F-16 which utilized the Honda CBR600RR engine with a new focus on integrating the 10" Hoosier tires. F-17's design objectives targeted weight reduction, improved aerodynamic efficiency, and improved engine efficiency. Further emphasis was placed on improving our documentation of engineering practices to aid in engineering decisions made at a holistic level and knowledge transfer. The end result is a high powered car with an aggressive aerodynamics package at a wet weight of 197 kg.

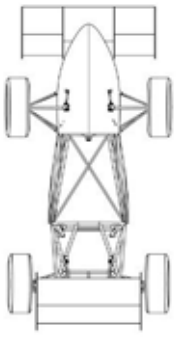


BRAKE : Wilwood GP200 with Tilton 78 Series Master Cylinders
BSCD : 67 mm/42.5 mm/4/599 cc
COOLING : Single Side Mounted Radiator with Ducted SPAL Fan
DRIVE : Chain Drive, Taylor Racing Differential
ELECTRONICS : PE3 with MoTeC data logger
ENGINE : Honda CBR600RR
FR/RR TRACK : 1156 mm/1143 mm
FRAME : 4130 Steel Spaceframe
FUEL SYSTEM : External Walbro Fuel Pump
FUEL TYPE : 100 Octane
MATERIAL : Carbon fiber, 4130, 7075 and 6061
MPD : 11,000 rpm
MPT : 10,500 rpm
OLWH : 3058 mm/1349 mm/1200 mm
SUSPENSION : SLA A-Arm Suspension with Push/Pull-rod Actuated Dampers
TIRE : 16x7.5-10 Hoosier
UNIQUE : 10" Hoosiers
WEIGHT : 690 lbs
WHEELBASE : 1613 mm

United States

67 University of Delaware
Blue Hen Racing

The University of Delaware, Blue Hen Racing would like to present the 2017 Formula SAE racecar. The Blue Hen Racing team is back with avengence since the last Formula SAE submission in 2014. The past few years have provided the club with time for extensive learning and developing. Introduction of an Electric Vehicle team as well as new technical courses such as Vehicle Dynamics, Powertrain Theory, and Engineering in Motorsports have helped bring the club back to life. The 2017 racecar began with sixteen senior design students working diligently throughout the fall to completely design and produce a rolling chassis. While designing and manufacturing, the seniors also spent time training and mentoring the underclassmen to allow more involvement in the spring in order to complete the car. This led to new innovation factors setting the 2017 vehicle apart from any vehicle complete by a UD team before. Specifically, the first generation of an aerodynamic package for the racecar has been designed. Swinging for the fences, the team developed a front splitter and a rear wing to further help keep the Hoosier Slicks on the ground. Blue Hen Racing takes pride in getting new members in



BRAKE : Tilton Master Cylinders, Wilwood Calipers, CNC Rotors
BSCD : 67mm / 42.5mm /4 Cylinder / 599cc
COOLING : Side mounted Mishimoto radiator with electric fan
DRIVE : Single reduction, chain drive, Taylor Race Engineering MK2 Differential
ELECTRONICS : Stock GSXR ECU, Aim Digital Dash
ENGINE : 2008 GSXR 600
FR/RR TRACK : 50in FR / 48in RR
FRAME : 4130 Chromoly Steel
FUEL SYSTEM : Walbro Fuel Pump, Electronic Fuel Injection
FUEL TYPE : 100 Octane
MATERIAL : Steel, Aluminum, Carbon Fiber
MPD : 80hp at 13,000 RPM
MPT : 32ft/lbs 11,500 RPM
OLWH : 110 in, 56in, 46in
SUSPENSION : Double unequal length A-Arms, pushrod, aluminum rockers
TIRE : Hoosier R25B 20.5x7.0-13.0
UNIQUE : 3-D printed intake, adjustable pedal box
WEIGHT : 680lb
WHEELBASE : 62in

United States

69 University of Calif - Los Angeles
Bruin Racing

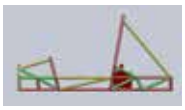
The new 2017 Formula vehicle from UCLA iterates upon the 2016 vehicle, maintaining a similar chassis, suspension and brake design. The chassis is constructed from 4130 chromoly tubing, with a pushrod actuated, double wishbone suspension implemented at each corner. Our third vehicle ever also has a completely new powertrain, with the new 2017 Yamaha YZ450FX engine running the stock Keihin ECU with custom intake, exhaust, fuel, and cooling systems. The drivetrain features a custom sprocket with the Drexler FSAE differential. The exterior consists of a carbon fiber fairing with panels and side pods.

BRAKE : Custom rotors, Tilton master cylinders, Wilwood calipers and pads
BSCD : 97.0 mm/60.8 mm/1/449 cc
COOLING : Side-mounted dual-core Mishimoto Kawasaki KFX450R radiator, 650 CFM Fan
DRIVE : Chain Drive
ELECTRONICS : Keihin EFI, Trailtech GPS Dash Display, Lead-Acid Battery
ENGINE : 2017 Yamaha YZ450FX
FR/RR TRACK : 1219.8/1168.4 mm
FRAME : Welded Steel Round Tube
FUEL SYSTEM : Stock Keihin EFI, Bosch EV14 Injector, Aluminum Rigid Body Tank
FUEL TYPE : 100 Octane Gasoline
MATERIAL : 4130 Chromoly Steel
MPD : 39.2 kW (7500 RPM)
MPT : 43.6 Nm (9400 RPM)
OLWH : 2552.5/1435.4/1118.2 mm
SUSPENSION : Double Wishbone, Pushrod-Actuated Damper
TIRE : Hoosier LC0 6.0/18.0-10
UNIQUE : Sandwich Sticker, Rekluse Automatic Centrifugal Clutch
WEIGHT : 540 lbs
WHEELBASE : 1530.0 mm

United States

72 Chandigarh Engineering College
The Mean Mechanics

The 2017 Chandigarh Engineering College Formula SAE Team is c competing in Formula SAE, Lincoln, for the third time. For the first time in the team's short history, the design is an evolution of the previous car rather than an entire re-design. Drivability, reliability, weight reduction and manufacturability were chosen as specific areas of improvement for this year's team. In the development of the 2017 competition vehicle, a strong emphasis was placed on the car's powertrain to make the vehicle more driver friendly. This powertrain focus, compliments the 2018 vehicle's emphasis on the frame and suspension to create a solid foundation for the future development.



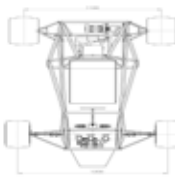
BRAKE : All disc brakes
BSCD : single cylinder
COOLING : Water cooled
DRIVE : Chain drive
ELECTRONICS : Hela cut off switch
ENGINE : KTM 390
FR/RR TRACK :
FRAME : Simple
FUEL SYSTEM : Carburetor
FUEL TYPE : Petrol
MATERIAL : IS 1239
MPD : 35 bhp
MPT : 7000
OLWH :
SUSPENSION : Double wishbone
TIRE : 13 inches
UNIQUE : Turbo charger used
WEIGHT : 325 kg
WHEELBASE : 60 inches

India

77 Hindustan University
ATRAIU RACING

ATRAIU RACING HINDUSTAN UNIVERSITY

The main design objective of our team was to reduce overall weight, to have low center of gravity and polar moment of inertia. The team has worked extensively to achieve these parameters. Also the overall length of the vehicle was reduced as much as possible to increase manoeuvrability and drive-ability. The suspension design was kept simple yet effective to reduce mass an design complexity. Other areas the team focused on was cost and fuel efficiency. Using the KTM 390 engine helped us achieve these and also is easily serviceable due to availability of parts. The performance parameters of the engine is immaculate while the other sub systems interests focused on efficiency. These decisions helped us achieve our goal.

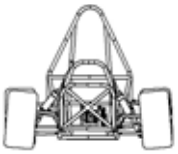


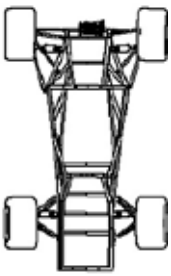
BRAKE : 2 piston,floating calipers,short master cylinder with Remote reservoir
BSCD : 89mm/60mm/single/375cc
COOLING : Oil cooled type with copper coolant lines
DRIVE : Rear wheel, Chain type with limited slip differntial
ELECTRONICS : Stock engine harness modified to suit sub-systems
ENGINE : KTM 390 engine (375cc)
FR/RR TRACK : 1200/1100 (mm)
FRAME : Mild steel Tube space frame
FUEL SYSTEM : Fuel injected (Fuel pressure:2.5-2.9bar)
FUEL TYPE : 95RON
MATERIAL : Aluminium Fuel tank
MPD : 9000
MPT : 6000
OLWH : 2400,1325,1210 (mm)
SUSPENSION : Double wishbone, Direct acting coil over damper
TIRE : 8.0x6.0-10(FR),18.0x7.5-10(RR)/LCO,R25B
UNIQUE : Student designed pneumatic gear shifter,overall chassis length
WEIGHT : 590 lbs
WHEELBASE : 1550 mm

India

79 University of North Carolina - Charlotte
49ers Racing

The Underbird 2k17 begins a new line of naming conventions which harken back to 1993 when Alan Kulwicki won his championship in the famed Underbird. At UNC Charlotte we engineer and race in honor of Alan Kulwicki.





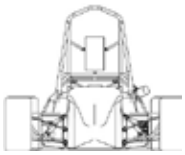
BRAKE : tilton 77 master cylinders with wilwood PS-1 calipers
BSCD : 95mm bore / 65mm stroke / single cylinder / 510cc
COOLING : Side mount radiator with elcetric fan
DRIVE : Drexler differential
ELECTRONICS : MoTec M400 ECU / MoTec C125 Dash
ENGINE : KTM 525 EXC
FR/RR TRACK : Front: 46in / Rear: 46.5in
FRAME : Steel Tube Frame
FUEL SYSTEM : EFI
FUEL TYPE : 93 Octane
MATERIAL : 4130 Steel
MPD : 45HP @ 7600 RPM
MPT : 38ft-lb @ 6200 RPM
OLWH : Length: 96in / Width: 56in / Height: 43in
SUSPENSION : Double Wishbone (front and rear), Direct Actuated
TIRE : 18.0x6.0-10 Hoosier LC0
UNIQUE : Custom clutch master cylinder
WEIGHT : 530lbs
WHEELBASE : 61in

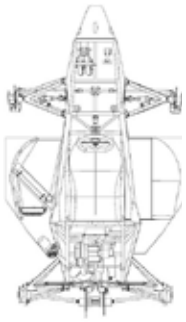
United States

80 California State University - Chico
Wildcat Racing

CSU Chico MMEM Department's FSAE Wildcat Racing team of engineers accomplished another successful year at the annual world wide collegiate engineering competition in Lincoln, Nebraska. Our FSAE team placed 13th overall out of 80 internal combustion teams which included 2nd place in fuel efficiency. This was the best finish yet after the club was founded only four years ago.

Objectives for the team this year is to place within the top 10 team's at competition this June. To accomplish this deadlines were placed earlier to allow focus on calibrating and adjusting the car for peak performance around refining vehicle design. Wildcat Racing has set a goal to decrease the car's weight by 30 lbs for a target weight goal of 400 lbs. New technologies in our design; billet aluminum a-arms, load cells to determine tire loading, aircraft fabric for aerodynamics, carbon fiber pushrods, adjustments to static/dynamic camber change, and much more. This current vehicle will continue to increase engineering practice with our members. Thank you to our engineering college and all of our sponsors!





BRAKE : Floating Rotors / Wilwood Calipers / Tilton Master Cylinders
BSCD : 95 mm / 63.4 mm / Single Cylinder / 449 cc
COOLING : Side Mounted 14 Core Dual Row Radiator
DRIVE : Custom Locked Spool
ELECTRONICS : Motec M800
ENGINE : WR450f
FR/RR TRACK : 1270 x 1169 mm
FRAME : Tubular Space Frame
FUEL SYSTEM : Fuel Injection
FUEL TYPE : 91 Octane
MATERIAL : 4130 Steel Alloy
MPD : 7000 rpm
MPT : 6000 rpm
OLWH : 2591 x 1448 x 1219 mm
SUSPENSION : Billet Aluminum Double Wishbone to Pushrod
TIRE : 18.0 x 6.0 - 10, R25B
UNIQUE : Touch Screen HUD, Load Cells, Centrifugal Clutch, Traction Control
WEIGHT : 550 lbs
WHEELBASE : 1536.7 mm

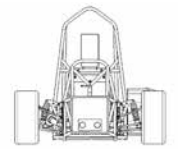
United States

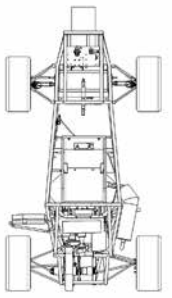
82 Honda Technical College Kansai
Yonpakuto

Team Yonpakuto is the FSAE team from Honda Technical College Kansai in Japan. We make a new car from a new concept every year.

This year's car concept is [Sharp acceleration from corners to straights]. And we think it can be achieved by a powerful 4-cylinder engine and compact vehicle size. Also, we made a lightweight machine by making a compact steel space frame.

Among the participating FSAE 4-cylinder cars, it's one of the lightest. Thus, we think our acceleration ability can reach 75m in just over 4 seconds.
We aim for first place in this year's acceleration competition.





BRAKE : Fr:2 Outboard Rr:2 Outboard
BSCD : 67.0mm Bore/42.5mm Stroke/4 Cylinders/599cc
COOLING : Single,side mounted radiator
DRIVE : Chain drive
ELECTRONICS : MoTeC
ENGINE : CBR600RR PC40
FR/RR TRACK : 1095mm/1100mm
FRAME : Steel space frame
FUEL SYSTEM : Fuel injection
FUEL TYPE : 100 Octane
MATERIAL : Steel,Aluminium,Glass Fiber
MPD : 11000rpm
MPT : 9500rpm
OLWH : 2455mm,1295mm,1190mm
SUSPENSION : Double unequal length A-arm,Pull rod
TIRE : 18.0×6.0-10,Hoosier R25B
UNIQUE : Compact vehicle size
WEIGHT :
WHEELBASE : 1580mm

Japan

86 University of Engrg & Tech - Lahore
KSK Formula Racing

Design of this car follow 2 basic rules:
1. Simplicity
2. Safety

Each and every system and sub-system is designed on these fundamental principals.

Chassis of the body is designed to be the steel space frame and is designed to give its driver a feel of a very rigid car.

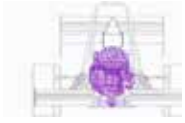
Unequal A-Arm independent suspension is designed to maximize the contact of the tires all the time.

Chain design is used to minimize the mechanical losses associated with the shaft drive of belt drive.

Fuel tank used is made of the aluminum and have the capacity of 7 liters. All fuel lines are connected using threaded fittings to prevent leakages.

We used the radiator which have the core size of 386 to 354 mm. and we mounted it in the side pod of the car to get more fresh air. And it has made of the aluminum tubes and we a 1000 cfm fan for the cooling system.

Upright is designed to be manufactured from a single block of Steel. Upright is then case hardened to increase the strength of upright.



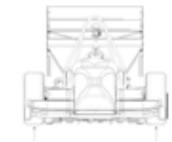
BRAKE : Disk Brake
BSCD : 60/52.4/4/600
COOLING : Water Cooled
DRIVE : Chain/Sprocket
ELECTRONICS : Stock
ENGINE : Kawasaki Ninja GPZ 600
FR/RR TRACK : 1425/1300
FRAME : Steel Spaceframe
FUEL SYSTEM : Stock
FUEL TYPE : 93
MATERIAL : N/A
MPD : 10500
MPT : 9000
OLWH : 3200,1550,1150
SUSPENSION : Unequal A-Arm
TIRE : 20.0*7.5-13, R25B
UNIQUE : N/A
WEIGHT : 300Kg
WHEELBASE : 1700

Pakistan

95 University of Illinois - Urbana Champaign
Illini Motorsports

Illini Motorsports' 2017 competition entry has been designed using points analysis coupled with lap simulation, along with a renewed focus on reliability and weight consciousness. Key design changes include a new front wing and diffuser design, the implementation of anti-lock brakes, and updates to our custom electronics package.

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



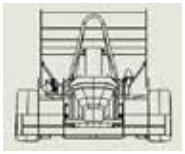
BRAKE : AP Racing 4-piston front, 2-piston rear
BSCD : 67mm bore / 42.5mm stroke / 599cc
COOLING : Vertically mounted single core double pass radiator, 625 cfm fan
DRIVE : RWD
ELECTRONICS : Motec M400 and student designed data acquisition system
ENGINE : Yamaha R6
FR/RR TRACK : 49in front, 49in rear
FRAME : 4130 Steel Space Frame
FUEL SYSTEM : Stock Yamaha
FUEL TYPE : 93 Octane
MATERIAL : 4130 Steel
MPD : 10500 rpm
MPT : 9000 rpm
OLWH : L: 3238mm / W: 1458mm / H: 1196mm
SUSPENSION : Double unequal length A-arms, Ohlins TTX25 dampers
TIRE : 20.5x7x13 Hoosier R25B
UNIQUE : Custom airfoils,custom CFRP steering wheel,custom PDM
WEIGHT : 610
WHEELBASE : 64in

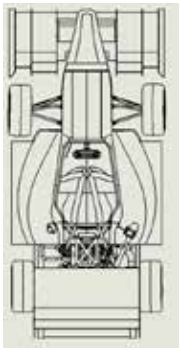
United States

96 University of Kansas - Lawrence
JAYHAWK MOTORSPORTS

Jayhawk Motorsports is a student organization within the School of Engineering at the University of Kansas. For over 20 years, students have designed and built award-winning racing vehicles. Each year, cross-disciplinary teams build vehicles to take to international competitions against other universities. The vehicles are judged on a wide variety of criteria such a design, performance and marketing. Students gain experience in project management, design, manufacturing, testing and perhaps most imporantly, teamwork. Jayhawk Motorsports manufactured its first carbon fiber chassis in 1998, and has since become the longest running FSAE team to build a carbon fiber chassis in-house. We also own and operate an engine dynamometer and chassis dynamometer for powertrain development.

Since 2012, Jayhawk Motorsports has developed two vehicles a year, one Electric and one Combustion, being one of the pioneering teams in the United States in the growing Electric field. We are driven by the passion of engineering and built on the 20 plus years of teams before us. Success developed by one racing family, Jayhawk Motorsports.





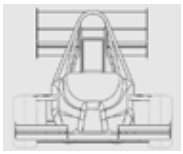
BRAKE : Self developed Monoblock dual piston calipers
BSCD : 67mm/42.5mm/4 Cylinders/599cc
COOLING : Side mounted single pass radiator with Shroud mounted electrical fan
DRIVE : 520 Chain Drive
ELECTRONICS : Life Racing F88 ECU/DAQ, Electronic Throttle control with Arduino integration
ENGINE : Modified Honda CBR600RR
FR/RR TRACK : 1219mm/1168mm
FRAME : CFRP Monocoque with fully stressed engine
FUEL SYSTEM : Port fuel injected, with student designed fuel tank
FUEL TYPE : E-85
MATERIAL : CFRP with honeycomb core structure
MPD : 12000
MPT : 8500
OLWH : 2936mm/1451mm/1200mm
SUSPENSION : Unequal length dual A-arms with Push-rod system
TIRE : 20 x7.0 -13in Continental C17 with custom carbon fiber rims
UNIQUE : Fully Stressed engine with CFRP subframe and IA integrated Nosecone
WEIGHT : 575lb
WHEELBASE : 1600mm

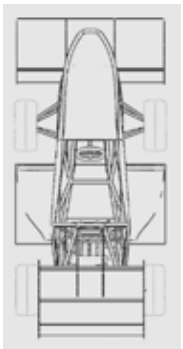
United States

97 Oakland University
Grizzlies Racing

The 2017 season has brought the Oakland University Formula SAE team to a new level. Achieving a top 10 finish in the Endurance Event would mark a huge success for the 2017 season. With several new and improved designs in various vehicle systems, we have put a major focus on manufacturing, reliability, improved handling. New designs and manufacturing techniques helped reduce costs and improve the precision of components compared to previous years. Components have also been redesigned to ensure reliability and safety for both the vehicle and driver. The team has also incorporated a full aero package which is brand new to the team but has been in development for 3 years. This will drastically help improve the vehicles handling and provide the team with another subsystem that will be improved throughout the years to come.

The Oakland University Formula SAE Team would like to thank all of our sponsors and faculty for supporting us and advancing us as engineers. Without them this team and project would not be possible.





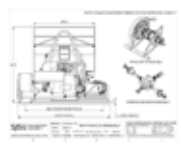
BRAKE : ISR
BSCD : 67.0mm / 42.5mm / 4 / 600cc
COOLING : Single Radiator
DRIVE : Chain driven torsen differential
ELECTRONICS : MegaSquirt3 w/DAQ
ENGINE : Honda CBR 600 RR
FR/RR TRACK : 49" / 47"
FRAME : Steel tube
FUEL SYSTEM : Port injected
FUEL TYPE : 93
MATERIAL : 4130 Steel round and square tubing
MPD : 80 hp
MPT : 40 ft lbs
OLWH : 2884 / 1400 / 1218 (mm)
SUSPENSION : Direct acting / double wishbone
TIRE : 13" Continental C16
UNIQUE : Side mounted exhaust
WEIGHT : 650 lbs
WHEELBASE : 61"

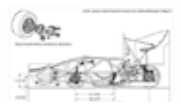
United States

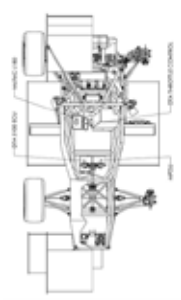
99 San Jose State University
Spartan Racing

The 2017 Formula SAE competitions marks the ninth consecutive year for San Jose State University's Spartan Racing Formula SAE team. SR-9 is an evolution of our previous years and features a 4130 steel tube frame, 10in Hoosier tires, and a full aerodynamics package. New for this year the car will be powered by a Triumph 675 3-cylinder engine running on E85 to take advantage of the rule change. Additionally, the team has upgraded to a MoTec L180 data logger to increase the data acquired during testing and help achieve our testing goals. While assessing the previous seasons, we found that the largest gains in vehicle performance were found during the testing phase. Emphasis on testing and validation is crucial to repeat high dynamic scores.

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





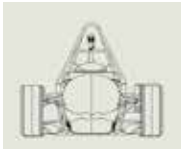


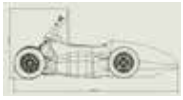
BRAKE : Tilton 77 Series MC, Wilwood GP200 Calipers
BSCD : 74mm/52.3mm/3/675cc
COOLING : Dual Sidepod Mounted Radiators
DRIVE : Chain Driven Drexler Limited Slip Differential
ELECTRONICS : DTA S100 ECU, MoTec L180 DAQ
ENGINE : Triumph 675 Triple
FR/RR TRACK : 48in/47in
FRAME : 4130 Steel Space Frame
FUEL SYSTEM : Single-rail EFI
FUEL TYPE : E85
MATERIAL : 4130 Steel, Carbon Fiber, 3D Printed ABS, Aluminum
MPD : 80HP @ 9,000RPM
MPT : 52 Ft-lbs @ 7,000RPM
OLWH : 115in, 56in, 51in
SUSPENSION : Pull-Rod Front, Push-Rod Rear, Ohlin Shocks
TIRE : 18x6x10 Hoosier R25B
UNIQUE : Electro-Pnuematic Shifting, Electronic Throttle, Custom Dash and PDU
WEIGHT : 570lbs
WHEELBASE : 60.25in

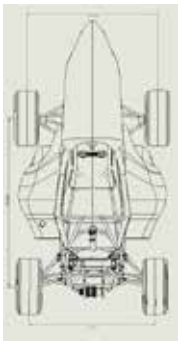
United States

100 Louisiana State University
TigerRacing

LSU TigerRacing has grown into a larger team and brings a new car with the designs of some of our newer members. This year's car 'Sierra' has some minor changes from the 2016 car, including a shorter frame, changes in engine internals, and refined side pods. Our main goals this year were to lose weight from last year's design and improve design processes and validation. The team chose to remain with the CBR600 F4i engine, while making significant changes to our suspension components, chassis, and ergonomics.







BRAKE : Floating 4130 Rotors, Tilton Master Cylinders
BSCD : 62x42.5, 599cc
COOLING : Dual Pass Aluminum Radiator, Electric Water Pump
DRIVE : Drexler Limited Slip, Unequal Length Halfsharts
ELECTRONICS : Performance Electronics Stand Alone ECU
ENGINE : Honda CBR F4i
FR/RR TRACK : 1250, 1200
FRAME : 4130 Space Frame
FUEL SYSTEM : Fuel Injected, Inline Fuel Pump
FUEL TYPE : Gasoline, 93
MATERIAL :
MPD : 10500
MPT : 10500
OLWH : 2700x1450x1142
SUSPENSION : Unequal Length Double A-Arms, Pull Rod Front, Push Rod Rear
TIRE : 20.5x7R13 R25B
UNIQUE : Maple Steering Wheel, Red Painted Chassis Tube for Baton Rouge
WEIGHT : 267 kg
WHEELBASE : 1600

United States

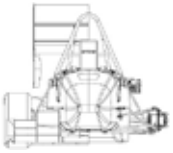
101 Georgia Institute of Technology
Georgia Tech Motorsports

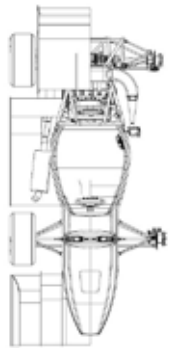
We celebrate our 30th Anniversary with the introduction of Car 101, the 26th vehicle produced by GT Motorsports throughout our extensive history. We strive to produce consumer-oriented vehicles that are fast, comfortable, reliable, and affordable. GT Motorsports takes the vision of Formula SAE to heart; our cars are 100% student designed, and our team members manufacture over 90% of the components in house. Each new car is built from the ground-up every year; no parts are recycled from previous years.

Car 101 features the first-ever hybrid monocoque design, with a CFRP monocoque front chassis and 4130 steel spaceframe & stressed engine in the rear. Additional emphasis was placed on improved aerodynamics, an overhauled electronics system, and redefined kinematics. With these advancements, Car 101 stakes its claim as the fastest vehicle GT Motorsports has ever produced.

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 sponsors, contributors, and vendors featured at gtms.gatech.edu/sponsors.

Hi Mom!



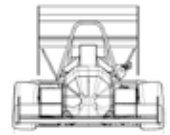


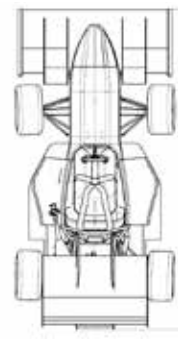
BRAKE : Student Designed Monobloc Caliper. 4 Piston Front, 2 Piston Rear. Bosch ABS
BSCD : 103.25mm/92mm/V8/6162cc
COOLING : Rear-mounted aluminum radiator with thermostatically-controlled fan
DRIVE : 520 Chain Drive with Drexler LSD
ELECTRONICS : Bosch MS6.2 ECU, GEMS LDS4 Dash, Student-Designed PDM
ENGINE : LS3
FR/RR TRACK : 46in / 46in
FRAME : CFRP Monocoque Front / 4130 Steel Rear Subframe
FUEL SYSTEM : EFI, External Fuel Pump
FUEL TYPE :
MATERIAL : Teryllium, Beryllium, Ununium
MPD : 430hp @ 5900rpm
MPT : 424ft-lb @ 4600rpm
OLWH : 115in long / 54in wide / 47in high
SUSPENSION : SLA, Pushrod Front
TIRE : Hoosier 6.0/18.0-10 LC0
UNIQUE : Chrome Gold. Various Acronyms
WEIGHT : 575lbs w/ driver
WHEELBASE : 60.5

United States

107 Virginia Tech
VTMc

VTM17c is the 27th 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 LC0 tires on 10 inch carbon fiber wheels. The car is powered by a Yamaha WR450 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.





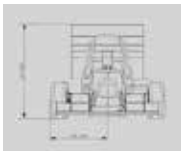
BRAKE : Slotted floating rotor, AP Racing calipers
BSCD : 95mm/63.4mm/1cyl/449cc
COOLING : Sidepod ducted radiator
DRIVE : Chain drive, stock gearbox, Drexler LSD
ELECTRONICS : MoTeC M400 ECU with custom PDU
ENGINE : Yamaha WR450
FR/RR TRACK : 1149 mm/1149 mm
FRAME : Hybrid CFRP monocoque, steel tube space-frame
FUEL SYSTEM : Port injection, 324 cc/min
FUEL TYPE : 93 octane
MATERIAL : Carbon fiber, aluminum, steel, titanium, magnesium
MPD : 30 kW (8300 RPM)
MPT : 38 Nm (6500 RPM)
OLWH : 2964 mm, 1459 mm, 1171 mm
SUSPENSION : Double unequal length A-arm with pullrod actuated coil springs/dampers
TIRE : 18x6.0-10 Hoosier R25B
UNIQUE : Custom data logger and dash display
WEIGHT : 236 kg
WHEELBASE : 1537 mm

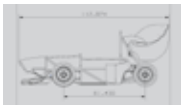
United States

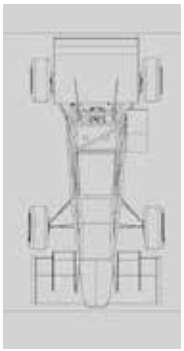
109 Kettering University
Kettering University Motorsports

Kettering University Motorsports is proud to introduce GMI2017. Continuing with a lightweight vehicle philosophy, the turbocharged 450 cc engine was maintained. Special attention was given to reduce overall system mass and improving vehicle dynamics through a redesigned suspension and efficient aero package. We firmly stand behind our design philosophy which promotes efficient use of materials and processes that create a simple, all-around effective competitor.

We would like to thank all of our sponsors for their support in the pursuit of the spirit of SAE. We would like to give a special thanks to our friends, families, and sponsors for their continued support.







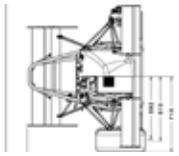
BRAKE : Waterjet 1018 Steel Floating Rotors, Titon MC, Wilwood Calipers
BSCD : 95mm/62.4mm/1 cyl/ 450cc
COOLING : Raptor 700 Radiator
DRIVE : Chain Driven, Drexler Formula Student Diff
ELECTRONICS : Woodward 70 Pin, Minimalist Loom
ENGINE : Yamaha WR450F
FR/RR TRACK : (1187mm/47") (1187mm/47")
FRAME : 1018 Mild Steel
FUEL SYSTEM : Relatively-Low-Pressure EFI
FUEL TYPE : E85
MATERIAL : Steel and Aluminum
MPD : 65 hp (8700 rpm)
MPT : 55 Nm (8000 rpm)
OLWH : (2822mm/111" long)(1441mm/57" wide) (1182mm/47" tall)
SUSPENSION : Double unequal length A-Arm with Pull Rod Front and Push Rod Rear
TIRE : 18x7.0x10 Hoosier LC0
UNIQUE : Best car North of Ann Arbor, South of Saginaw, East of Lansing,West of Canada
WEIGHT : 525lbm (238kg)
WHEELBASE : 1560mm/61.5"

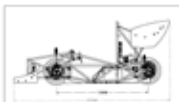
United States

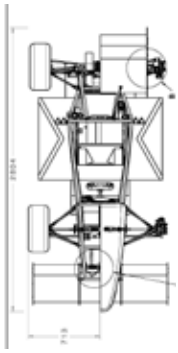
Information published as supplied by teams on or before April 10, 2017 with minimal editing.

E203 Polytechnique Montréal
Poly eRacing

Poly eRacing is the first North american all-electric formula SAE team which started from nothing in 2009. We competed at the FSG in 2012 with our first car. Our 2017 prototype is the third major car iteration. We focused our efforts in reducing weight, improving our knowledge in vehicle dynamics and acquiring data on the car.





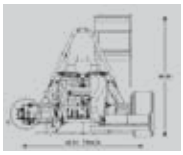


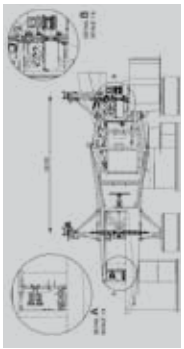
BRAKE : Floating rotors, adjustable bias
COOLING : Liquid Cooled Motor, Air Cooled Cells
DRIVE : RWD, Drexler Differential
ELECTRONICS : Self developped low voltage electronics
EMCAC : 6.05 kWh
FR/RR TRACK : 1220 / 1184 mm
FRAME : Spaceframe
MATERIAL : 4130 Chromoly
MAXMOTORRPM : 7000 RPM
MAXSYSVOLT : 300 V
MOTORCNTRLR : BAMOCAR D3
MOTORTYP : Enstroj EMRAX 208
NMLMM : 1 rear 80kW
OLWH : 2739/1426/1106 mm
SUSPENSION : Double a-arms/push-rod with adjustable anti-roll bars
TIRE : Hoosier 18.0 x 6.0 RB25
TTRANSRATIO : 1 speed
WEIGHT : 248 kg
WHEELBASE : 1598 mm

Canada

E204 McGill University
McGill Formula Electric

MFE3 is McGill's 4th fully electric FSAE race car. With all new batteries and chassis, a wright savings of over 35lbs from the previous year was achieved.





BRAKE : AP Calipers and Master cylinder with Floating rotors
COOLING : Liquid cooled, rear radiator, electric pump and fan
DRIVE : Fixed gear, chain drive to Drexler differential
ELECTRONICS : Custom designed VC and BMS with CAN communication
EMCAC : LiCoO2 pouch cells, 6.4kWh
FR/RR TRACK : 1193.8mm / 1193.8mm
FRAME : Steel tube space frame, welded in-house
MATERIAL : 4130 Chromoly steel
MAXMOTORRPM : 5000 RPM
MAXSYSVOLT : 300V
MOTORCNTRLR : Rinehart PM100DXR
MOTORTYP : Emrax 228 MV, 3-phase permanent magnet
NMLMM : single rear motor, 80kW
OLWH : 2957.5mm, 1415.9mm, 1200mm
SUSPENSION : Double unequal length A-arms, push-rod actuated coilovers
TIRE : Hoosier 6.0/18.0-10 LCO
TRANSRATIO : 3.47:1
WEIGHT : 586 lbs with driver
WHEELBASE : 1574.8mm

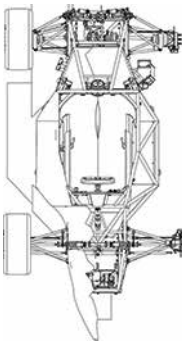
Canada

E207 San Jose State University
Spartan Racing Electric

Spartan Racing Electric, presents SRE-3, a small-scale, formula-style racecar intended to compete in 2017 Formula SAE Electric events. It was designed by a team of University graduate and undergrad students using computer-aided design, finite element stress and multi-physics analysis, and built using a combination of in-house and contracted machine shop labor.

SRE-3, the third design iteration, features an AC permanent-magnet, axial-flux motor and DC-AC motor controller in a steel-tube chassis. The team's goals are to build a reliable platform, achieve performance metrics with a max vehicle weight of 530 pounds, and CG height of less than 10 inches.

In designing the layout, the team recognized the fundamental constraints of an FSAE car minimizing height and centering of vehicle mass. The two greatest masses, driver and accumulators, were located as low and centrally as possible within the vehicle's envelope. The batteries were arranged in 4 enclosures around the driver. The motor, controller, and differential, were positioned aft of the driver's seat. These masses were centralized within the wheelbase to achieve a 50.5% front-axle-weight distribution.



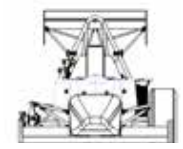
BRAKE : Dual-piston fixed, Wilwood GP200, Porterfield R41 Pads
COOLING : Water cooled motor and controller
DRIVE : Fixed Ratio Chain Drive
ELECTRONICS : HY-TTC 50 ECU
EMCAC : 24.0 Ah
FR/RR TRACK : 48in / 47in
FRAME : Steel space frame
MATERIAL : 4130 Chromoly Steel
MAXMOTORRPM : 5500 RPM / 240 Nm
MAXSYSVOLT : 302.4
MOTORCNTRLR : Rinehart PM100DX
MOTORTYP : 3-phase AC Permanent Magnet
NMLMM : 1 / aft center of cockpit / 100kW
OLWH : 106.2 x 56.0 x 44.3 (l x w x h) in.
SUSPENSION : Dbl-unequal length a-arm. push rod actuated spring / damper. Adj. Roll bar
TIRE : 18x6-10 / R25B / Hoosier
TRANSRATIO : N/A
WEIGHT : 325F / 319R
WHEELBASE : 61in

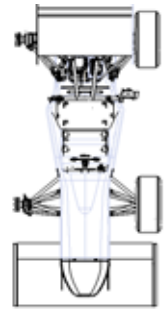
United States

E208 California Polytechnic State Univ - SLO
Cal Poly Racing

This year, the second year as a combined electric and combustion team, Cal Poly Racing features the CP17E for it's electric vehicle. The CP17E emphasizes a blank slate design approach, with every system undergoing a major redesign from the 2016 vehicle in order to meet a points requirement. In house developed competition simulation programs were used to create requirements and competition projections on a subsystem basis. Vehicle changes are headlined by a full carbon fiber monocoque, which serves as a lightweight and stiff platform for an efficiently integrated vehicle. Additionally, an aerodynamics package was implemented in order to take full advantage of the vehicle's powertrain. Electrically, the CP17E exhibits a fully redesigned battery pack, more than doubling the vehicles prior capacity without a significant weight increase. This is coupled with a full data acquisition system in order to provide active vehicle information and tuning feedback.

We would like to thank our families, friends, school, and sponsors, especially Zodiac Aerospace, Henkel, TenCate, Next Intent, and ANSA Beta CAE Systems for making this vehicle possible!





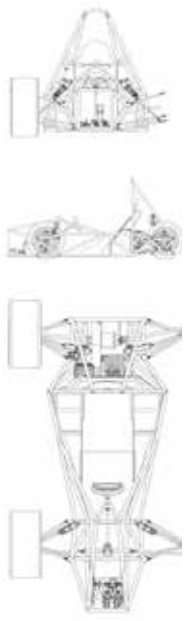
BRAKE : Brembo Caliper / Tilton Master Cylinder / Custom Rotors and Lines
COOLING : Air/Water Combined Cooling
DRIVE : Single Motor / Rear chain-drive
ELECTRONICS : Custom Dashboard and Daughter Card
EMCAC : Lion / 6.4 kWh
FR/RR TRACK : 47 in/46 in
FRAME : Full Carbon Fiber Moncoque
MATERIAL : Steel, Aluminum, Carbon
MAXMOTORRPM : 5000
MAXSYSVOLT : 300
MOTORCNTRLR : RMS PM100DX
MOTORTYP : Enstroj EMRAX 228
NMLMM : 1 motor / rear inboard / 80kW
OLWH : 114/54/45 in
SUSPENSION : Double Unequal A-Arm, Pushrod and Pullrod Actuated Spring and Dampe
TIRE : Hoosier R25B, 13-inch
TRANSRATIO : 4.2:1
WEIGHT : 620 lb
WHEELBASE : 61 in

United States

E210 University of California - Davis
UC Davis Formula Racing

The design concept for FE4, UC Davis Formula Racing's 2017 car, springs from intent to advance and optimize our 2016 car. Based on extensive analysis of each subsystem, the team has developed a compact, centralized, rigid, and high performance vehicle package.

Major design goals for our 2017 vehicle were weight reduction, improved thermal management, and enhanced vehicle dynamics, as supported by substantial simulation and design validation. Both our high and low voltage electronics systems have been reworked for enhanced reliability and efficiency, as well as to support augmented data collection and vehicle diagnostic capabilities. Other critical design elements include modularity, manufacturability, and safety.



BRAKE : 254mm Rotors, Tokiko Colette Calipers, Tilton Master Cylinder
COOLING : Passive Air
DRIVE : RWD, Single Ratio, Chain Reduction Drive
ELECTRONICS : Custom BMS
EMCAC : NCM-cathode Li-Ion / 7.5kWh
FR/RR TRACK : 1225mm / 1225mm
FRAME : Steel Spaceframe
MATERIAL : 4130
MAXMOTORRPM : 6000 RPM
MAXSYSVOLT : 116 Volts
MOTORCNTRLR : Curtis 1239e
MOTORTYP : ZERO Z-Force 75-7 Permanent Magnet
NMLMM : 1 / Rear / 50kW
OLWH : 1092mm
SUSPENSION : Unequal Length Double Wishbone, Pushrod-Actuated
TIRE : 20.5x7-13 R25B Hoosier
TRANSRATIO : 4.6
WEIGHT : 630lb (with driver)
WHEELBASE : 1560mm

United States

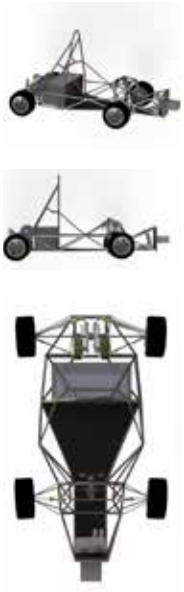
E213 San Diego State University
Aztec Electric Racing

Aztec Electric Racing (AER) is a first year team in the FSAE electric category. When they were first getting started earlier this year, the founding members sat down with the team's adviser, Dr. Youssef, to talk about plans for the team. That day AER's meaning of success was determined.

AER succeeds if:
1. Every student is given the opportunity to contribute to the team.
2. Every student who participates becomes successful in their respective field. (i.e. Walk in an engineering student, walk out an Engineer.)
3. AER will make a product that they are proud of and that people respect.

These concepts form the foundation that AER was built upon. AER has been chasing these pillars of success by setting specific, meaningful and measurable design goals, holding a Preliminary Design Review (PDR), and a Critical Design Review (CDR), practicing lean manufacturing techniques, and conducting through testing.

With that, AER is excited to present to you the Mark 1.
#fearthespear



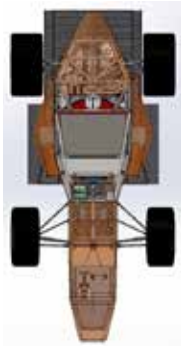
BRAKE : Floating rotors with custom pedal box
COOLING : Air cooled accumulator, water cooled motor and motor controller
DRIVE : RWD
ELECTRONICS :
EMCAC :
FR/RR TRACK :
FRAME : Space Frame
MATERIAL : 4130 Steel
MAXMOTORRPM :
MAXSYSVOLT : 300
MOTORCNTRLR : Sevcon
MOTORTYP :
NMLMM : 1 motor - 35kW
OLWH :
SUSPENSION :
TIRE :
TRANSRATIO :
WEIGHT : 560 lbs
WHEELBASE : 60 inch

United States

E215 California Institute of Technology
Caltech Racing

Caltech Racing is proud to present its entry into the Formula SAE Electric competition for the 2016-2017 year. Last year, as a first-year team, we made great strides toward competing in FSAE Electric by bringing our car to competition and participating in the static events. We have spent the last year completing the car, fixing any issues we had, and making improvements to some subsystem designs. This year, we are looking forward to reaping the results of all of our hard work from the last two years and competing with the top team in FSAE Electric by participating in the dynamic events as well as applying what we learned last year to the static events.

We would like to thank our sponsors, without whose support over these past two years we would not have been able to gain the valuable experience from working on this car!



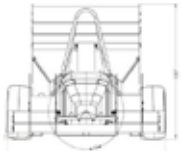
BRAKE : 4 Outboard, Floating Disc Brakes With Wilwood GP200 Single Piston Calipers
COOLING : Water Cooled, Dual Radiator
DRIVE : RWD, Chain Drive With Torsen Differential
ELECTRONICS : All Team-Designed Boards, Controls, BMS and Data Acquisition
EMCAC : Li NMC (INR) / 7 kWh
FR/RR TRACK : 1270 mm / 1220 mm
FRAME : Tubular Spaceframe
MATERIAL : 4130 Chromoly Steel
MAXMOTORRPM : 6000 RPM
MAXSYSVOLT : 290 V
MOTORCNTRLR : UniTek BAMOCAR D3-400-400-RS
MOTORTYP : Enstroj EMRAX 208 Brushless AC, Synchronous
NMLMM : 1 Rear-Mounted, 80 kW Motor
OLWH : 2980 mm / 1500 mm / 1203 mm
SUSPENSION : Double Unequal Length A-Arm, Pull Rod Actuated Coil Over Damper
TIRE : Pirelli 200/540-13 DM/WS (Front); 250/575-13 DM/WS (Rear)
TRANSRATIO : 5:1 (Fixed)
WEIGHT : 330 kg
WHEELBASE : 1575 mm

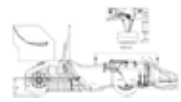
United States

E217 University of Kansas - Lawrence
Jayhawk Motor Sports

Jayhawk Motorsports is a student organization within the School of Engineering at the University of Kansas. For over 20 years, students have designed and built award-winning racing vehicles. Each year, cross-disciplinary teams build vehicles to take to international competitions against other universities. The vehicles are judged on a wide variety of criteria such a design, performance and marketing. Students gain experience in project management, design, manufacturing, testing and perhaps most imporantly, teamwork. Jayhawk Motorsports manufactured its first carbon fiber chassis in 1998, and has since become the longest running FSAE team to build a carbon fiber chassis in-house. We also own and operate an engine dynamometer and chassis dynamometer for powertrain development.

Since 2012, Jayhawk Motorsports has developed two vehicles a year, one Electric and one Combustion, being one of the pioneering teams in the United States in the growing Electric field. We are driven by the passion of engineering and built on the 20 plus years of teams before us. Success developed by one racing family, Jayhawk Motorsports.



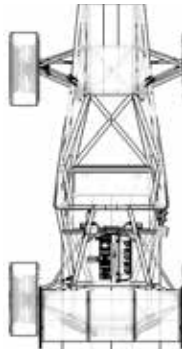


BRAKE : Brembo Calipers with custom master cylinders
COOLING : water cooled single pass radiator w/ fan
DRIVE : Custom Planetary Gear System
ELECTRONICS : Custom Arduino Control System, with Elektromotus BMS system
EMCAC : LiCoO2 / 7.1 kWh
FR/RR TRACK : 48/46 inches
FRAME : Carbon Fiber Monocoque
MATERIAL : Cytec 5320
MAXMOTORRPM : 5000 rpm
MAXSYSVOLT : 300
MOTORCNTRLR : RMS PM100DX
MOTORTYP : Enstroj Emrax 228
NMLMM : 2 Rear Emrax 228/ 55kW at 5000 rpm
OLWH : 3009mm/1451mm/1200mm
SUSPENSION : Unequal length dual A-arms with Push-rod system
TIRE : Hoosier 20.5x7.0-13 R25B
TRANSRATIO : 3:1
WEIGHT : 675
WHEELBASE : 63 inches

United States

E219 University of Illinois - Urbana Champaign
Illini Formula Electric

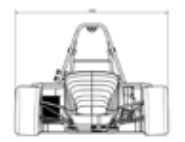
For the 2016-2017 car, Illini Formula Electric has done a complete redesign of the car while building upon previous designs. The biggest change this year is the location of the accumulator changing from two side pods to a singular accumulator container behind the driver. This saves on weight in the vehicle and simplifies the electrical systems. Because of this change, a new chassis design was made along with a new suspension design in order to improve vehicle dynamics. Our team's first aerodynamics package will also be added to the car this year. On the electrical side, the accumulators became more compact while keeping the same amount of energy. Also, we added more data acquisition for debugging and data logging. This includes both a CAN bus and a Bluetooth connection, all of which were made and designed in house. A major focus on the car this year is robustness which went into every component's design and manufacture. The main design goals of the vehicle were to complete the endurance event while staying competitive in the acceleration and autocross events.

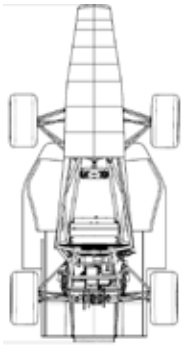


BRAKE : AP Racing 4-piston front, 2-piston rear
COOLING : Air cooled accumulator, oil cooled motor and motor drive
DRIVE : Rear wheel chain drive
ELECTRONICS : eLithion Lithiumate Pro BMS
EMCAC : A123 - LiFePO4/ 3 kWh
FR/RR TRACK : 1245 mm
FRAME : Steel space frame
MATERIAL : 4130 Chromoly Steel
MAXMOTORRPM : 7000
MAXSYSVOLT : 300
MOTORCNTRLR : Sevcon Gen 4 Size 8
MOTORTYP : Yasa 400 - Permanent Magnet Axial Flux Synchronous Motor
NMLMM : 1 / Rear / 75 kW
OLWH : 2940, 1676, 1092
SUSPENSION : Pushrod-actuated Unequal Length A-arm
TIRE : 20.5x7x13 Hoosier R25B
TRANSRATIO : 3.33:1
WEIGHT : 650 lb
WHEELBASE : 1676 mm

E220 Virginia Tech
VTMe

VTM17e is the 1st electric vehicle produced by Virginia Tech Motorsports for competition in Formula SAE Electric events. Using knowledge from the well-established combustion side of our team, we developed quantifiable goals and a formal testing program to validate the models used for system level designs. A simple architecture for the vehicle incorporates a steel tube space frame that builds on previous designs. Reliability and safety are the two most important factors that are considered in the design of the high voltage electrical system. The car is powered by a 40 kW Brammo electric motor controlled by an InMotion ACS80XL motor controller. An adjustable limited-slip differential allows the torque bias ratio to be tuned for acceleration and deceleration events. The suspension, powertrain, electrical, 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.



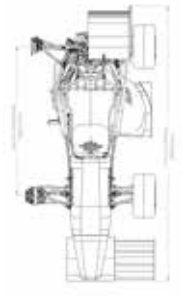


BRAKE : Slotted floating rotor, AP Racing calipers
COOLING : Sidepod ducted radiator
DRIVE : Chain drive, stock gearbox, Drexler LSD
ELECTRONICS : Custom, modular low voltage PCBs
EMCAC : Lithium-Ion / 4.8 kWh
FR/RR TRACK : 1149 mm / 1149 mm
FRAME : Steel tube spaceframe
MATERIAL : Carbon fiber, aluminum, steel, titanium, magnesium
MAXMOTORRPM : 8000 RPM
MAXSYSVOLT : 92 Volts
MOTORCNTRLR : Kollmorgen ACS80XL
MOTORTYP : Brammo GVM Traction Motor
NMLMM : 1 / rear, centered / 25 kW
OLWH : 2927 mm, 1438 mm, 1052 mm
SUSPENSION : Double unequal length A-arm with pullrod actuated coil springs/dampers
TIRE : 18x6.0-10 Hoosier R25B
TRANSRATIO : 3.5
WEIGHT : 604 lb
WHEELBASE : 1537 mm

E221 University of Wisconsin - Madison
Wisconsin Racing (EV)

The WR-217e brings a new era of vehicle design for Wisconsin Racing. This year, Wisconsin Racing developed a novel all-wheel drive electric powertrain from the ground up, including custom transmissions, a student-developed high voltage battery pack, and a physics-based torque vectoring traction control algorithm. Building on over twenty years of experience in FSAE, the WR-217e integrates these new electric powertrain systems with a hybrid carbon fiber monocoque/ steel space frame chassis and lightweight aerodynamics package.

The WR-217e was developed as an electric all-wheel drive platform that would serve as a foundation to improve upon in future years. Wisconsin Racing set three design goals to guide the development of the WR-217e: create an all-wheel drive electric powertrain, implement torque vectoring, and complete all dynamic events. The result is a vehicle with overall weight less than 525 [lb], rear weight bias of 55% with driver, center of gravity (CG) height of 10.1 [in], and four electric motors producing 90 [hp] peak at the wheels.

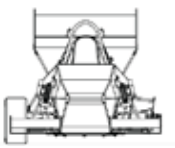


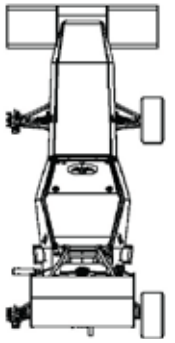
BRAKE : Floating rotors, inverted quad piston front, Sintered metal pads
COOLING : Water jacket cooled motors with dual radiators
DRIVE : Front: Planetary gear reduction, Rear: Two stage gear reduction
ELECTRONICS : Woodward PCM112, Vector DAQ,Steering angle, 3-axis IMU
EMCAC : Lithium Nickel Cobalt Aluminum Oxide, 6.5 kWhr
FR/RR TRACK : 1143 mm (45 in)
FRAME : Hybrid front monocoque rear steel tubular spaceframe
MATERIAL : Epoxy prepreg carbon fiber, 5052-Al Honeycomb, 4130 Steel
MAXMOTORRPM : 11200 RPM front, 5300 RPM rear
MAXSYSVOLT : 126V
MOTORCNTRLR : Plettenberg MST 140-200
MOTORTYP : Surface Permanent Magnet Brushless DC
NMLMM : 2 Plettenberg Nova 15 front, 2 Nova 30 rear, 90 kW max power
OLWH : 2941x1350x1169 mm (116x53x46 in)
SUSPENSION : Double unequal length A-arm, pullrod-actuated, vertical spring
TIRE : Hoosier R25B-18.0x7.5-10
TRANSRATIO : 6:1 Front, 4.5:1 Rear
WEIGHT : 306 kg (674 lb)
WHEELBASE : 1600.2 mm (63 in)

United States

E225 University of Utah
Formula U Racing

Formula U Racing is excited to bring their first ever electric car to the competition! The vehicle has been designed from the ground up this year incorporating a full carbon fiber composite monocoque, a full electric drive train, and 10 inch tires all around. Composite materials is the largest industry in Utah and we are proud to bring that to FSAE. This new full monocoque was made with unidirectional prepreg carbon fiber and Nomex honeycomb core. The electric drive train is made up of an 80kW Parker AC Motor, the Rinehart PM100DX controller, and is powered by a 72S3P cell accumulator. The team used carbon fiber tubes in all the suspension control arms and steering. Uprights and hubs were designed and machined out of aluminum to be packaged along with the breaks and rotors inside of a ten inch wheel. Formula U Racing would like to thank Hexcel, Williams International, Autoliv, L3, Janicki Industries, ACT Aerospace, TMI, and Napa Auto Parts for their generous support of the team! Go Utah!



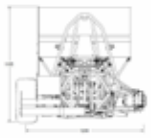


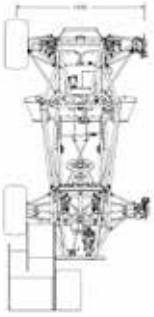
BRAKE : Wilwood PS1 Dual Piston
COOLING : Liquid Cooled Motor and Controller
DRIVE : Chain Drive
ELECTRONICS : Teensy 3.5 Microcontroller
EMCAC : LiPo / 5.6 kWh
FR/RR TRACK : 1257/1244 mm
FRAME : Full Carbon Fiber Monocoque
MATERIAL : IM7 8551 Unidirectional Carbon, Nomex Honeycomb Core
MAXMOTORRPM : 8,999
MAXSYSVOLT : 295
MOTORCNTRLR : RMS PM100DXR
MOTORTYP : Parker/GVM210-100Q/Brushless AC Axial Flux
NMLMM : Single Motor/ Rear/ 80kW
OLWH : 2978, 1460, 1199 mm
SUSPENSION : Double A-Arm, Pushrod
TIRE : AVON A92 16 x 6-10
TRANSRATIO : N/A
WEIGHT : 790
WHEELBASE : 1746 mm

United States

E226 Université Laval
Formule SAE de l'Université Laval

Formule SAE de l'Université Laval 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.





BRAKE : AP calipers / ductile iron rotors
COOLING : Two side mounted radiators with fans
DRIVE : In-wheel motors with self-developped and manufactured planetary gearbox
ELECTRONICS : Custom
EMCAC : LiPo (LiCoO2) / 6600 mAh
FR/RR TRACK : 1200 mm / 1180 mm
FRAME : Steel space frame
MATERIAL : Steel, aluminum, carbon fiber, girlfriend tears
MAXMOTORRPM : 15500 rpm
MAXSYSVOLT : 294 V
MOTORCNTRLR : Fuji IPM with custom electronics
MOTORTYP : Self developed motors
NMLMM : 4 motors / Wheel mounted / 30 kW @ 10k rpm
OLWH : 2920mm / 1410mm / 1195mm
SUSPENSION : Double unequal length A-Arm. Pull rod actuated
TIRE : 10'' Hoosier
TRANSRATIO : 11,52 :1
WEIGHT : 258 kg
WHEELBASE : 1530 mm

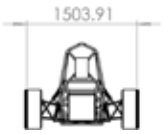
Canada

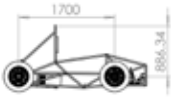
E228 Pakistan Navy Engineering College
Formula Electric Racing - NUST

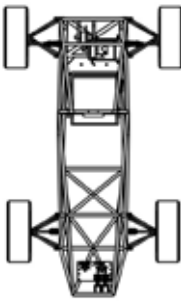
Team Formula Electric Racing NUST is proud to introduce FERN 17, a great step forward for the team in terms of engineering design and innovation. The team, comprising of 26 members, places a great deal of emphasis on weight reduction, manufacturability and reliable design.

Our chassis is a mild steel tubular space frame with unequal length double A-arms, actuated by pushrod on the rear and pullrod for front suspension, built for 13' Aluminum OZ Wheels. The body is made from carbon fiber, with side pods placed to direct air towards the motor. A limited-slip differential is used, with single gear reduction.

The electrical drivetrain employs a single air-cooled AC induction motor with a continuous power rating of 12kW. The accumulator container consists of two stacks of 18 LiPo cells, each, configured to provide a nominal voltage of 65.7V. Our low-voltage circuits have been designed keeping in mind FSAE requirements, with a special focus on reliability and safety. The vehicle comes with a custom-built data-logging and telemetry platform.





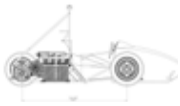


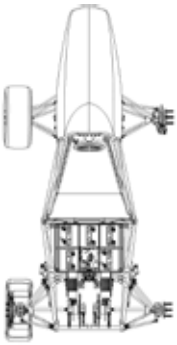
BRAKE : Hydraulic Brakes, double piston caliper and 5/8" master cylinder
COOLING : Air cooled motor
DRIVE : Rear wheel drive with LSD and single gear reduction
ELECTRONICS : Elithion BMS, Self developed data logging and telemetry system
EMCAC : Graphite based anode, 2.98 kWh
FR/RR TRACK : 1300 mm/ 1350 mm
FRAME : Steel Space frame
MATERIAL : Mild steel AISI 1020
MAXMOTORRPM : 7300
MAXSYSVOLT : 74.7
MOTORCNTRLR : Curtis 3 Phase AC
MOTORTYP : 3 phase AC induction motor
NMLMM : 1 in the rear of car with 32.9 kW
OLWH : 3000 mm, 1365 mm, 1150 mm
SUSPENSION : Double A arm suspension with Swinger 450 Dampers
TIRE : Road Racing Slick - Bias 20.5 X 7.0-13 R25B A2500
TRANSRATIO : 3.8
WEIGHT : 345
WHEELBASE : 1750

Pakistan

E229 University of British Columbia
UBC Formula Electric

As our first vehicle designed to compete in a Formula SAE event, the main goal was to produce a reliable yet competitive baseline platform for future improvements. The chassis and suspension designs were adapted from a previous combustion vehicle for the electric powertrain, and the electronics were developed in-house around a scalable architecture to provide support for advanced control algorithms (traction control and torque vectoring) as well as robust datalogging capabilities.



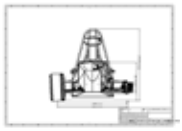


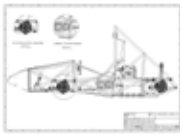
BRAKE : ISR 22-027 front calipers, AP Racing CP4226 rear calipers, cast-iron rotors
COOLING : Water cooling for motors, inverters, and accumulator
DRIVE : Dual independent 520 chain
ELECTRONICS : 6 self-developed PCBs, single CAN bus w/datalogger, Google Nexus 5 driver UI
EMCAC : LiFePO4 / 5.6kWh
FR/RR TRACK : 1185mm / 1174mm
FRAME : Space frame
MATERIAL : 4130 steel
MAXMOTORRPM : 6,000rpm
MAXSYSVOLT : 300V
MOTORCNTRLR : Unitek Bamocar-D3-400-400
MOTORTYP : Enstroj Emrax 208 MV
NMLMM : 2 / Rear / 80kWp each
OLWH : 2650mm / 1367mm / 1232mm
SUSPENSION : Double wishbone w/pullrod, Ohlins TTX25 MkII shock absorbers
TIRE : 20.5x7-13 R25B Hoosier
TRANSRATIO : 3-4:1
WEIGHT : 293-343kg
WHEELBASE : 1625mm

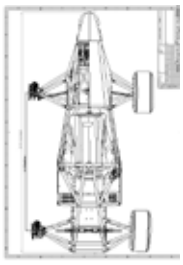
Canada

E233 University of Michigan - Dearborn
UM Dearborn Electric Racing

The 2017 University of Michigan-Dearborn Formula SAE Electric Vehicle was designed to be easy to drive and manufacturable in a timely manner so as to allow time for ample driver training, necessary tuning and verification and validation of all components. The performance goals are to place as a top contender in the Formula SAE 2017 dynamic events. The point mass simulation software, OptimumLap, was used to determine the most critical factors in system level design to reduce lap time. It was found that grip and vehicle mass were the most crucial of these parameters and each sub team was asked to design their respective components to meet these goals.







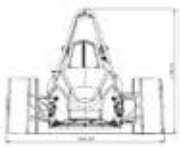
BRAKE : Mild steel rotors with 4 piston calipers front and rear
COOLING : Liquid cooled motors and motor controllers and air cooled batteries
DRIVE : Two motor, rear wheel drive
ELECTRONICS : Self developed BMS and safety circuits
EMCAC : LiCoO2/18.9 Ah
FR/RR TRACK : 1218,1202 mm / 47.95, 47.32 in
FRAME : Tubular space frame
MATERIAL : 4130 normailzed steel
MAXMOTORRPM : 3000 RPM
MAXSYSVOLT : 300 V
MOTORCNTRLR : Reinhardt
MOTORTYP : Enstroj Emrax 228
NMLMM : 2 motors/ rear/ 266 Nm (total)
OLWH : 2748.93, 1370.4, 1232.45 mm/ 108.22, 53.95, 48.52 in
SUSPENSION : SLA pull rod in front, SLA push rod in rear
TIRE : Hoosier 16"x6.0"-10 LC0
TRANSRATIO : n/a
WEIGHT : 650 lbs
WHEELBASE : 1615 mm/ 63.58 in

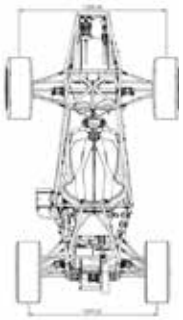
United States

E234 Universidad Nacional Autónoma de México
UNAM Motorsports EV

The E234 is the first electric vehicle designed by UNAM Motorsports and the first electric Formula SAE electric car design and manufacture by a mexican team. The goals for this year was to create an electric vehicle using last year's frame and suspension designs only with few modifications to fit in the electric power train. This helped us to focus only on the electric part to create a reliable car and understand all the systems that the electric car includes.

The design of the electric power train aim was to create a reliable system. All the security systems required where self design for better understanding of the car. The dynamic of the car was only adapted to fit in the battery pack and stiffer the structure for preventing any issue with the difference weight and forces.





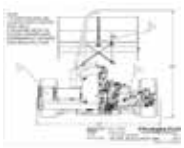
BRAKE : Fully floating, 4 mm steel gray vented Rotor, double piston caliper
COOLING : Single air-water radiator
DRIVE : Chain transmission
ELECTRONICS : ORION BMS Data Logging
EMCAC : LiFePO4 / 5kW
FR/RR TRACK : 1270/1100 mm
FRAME : Steel Space-frame A-36 TIG Welding
MATERIAL : Steel A-36
MAXMOTORRPM : 7000
MAXSYSVOLT : 275
MOTORCNTRLR : Bamocar D3
MOTORTYP : Asynchronous EMRAX 207
NMLMM : 1 / Rear transmission / 80 kW
OLWH : 3024/1493/1178 mm
SUSPENSION : Double A-arm with Anti-roll Bar
TIRE : Hoosier Tire Road Racing Slick - Bias 20.5 X 7-13 R25B C2500
TRANSRATIO : 4
WEIGHT : 657 lb
WHEELBASE : 1575 mm

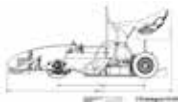
Mexico

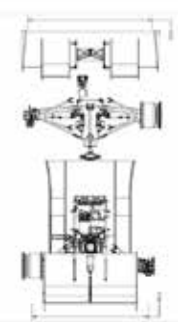
E237 University of Washington
UWashington Formula Motorsports

The UWashington Team's 2017 electric car has been three years and two previous competitions in the making. Over the last two years, the electric car has undergone many drastic design changes. Thus, this year the team has focused its attention on fine tuning the vehicle's design based on data collected from extensive testing performed from 2014-2016 as well as additional analyses completed this year. Accordingly, UWashington's 2017 car has greatly improved reliability and, by consequence, has seen significantly more on-track testing relative to the team's previous vehicles.

Design Objectives
• Design every part and assembly as a system, with overall competition points in mind; team direction, design compromises, and decisions are made accordingly
• Reduction of part and assembly weight through improved understanding of load cases and analyses, while still meeting
performance targets
• Utilize as much old and new test data as possible to validate theoretical models and concepts
• Provide and utilize ample testing time to extract maximum vehicle and driver performance as well as reliability







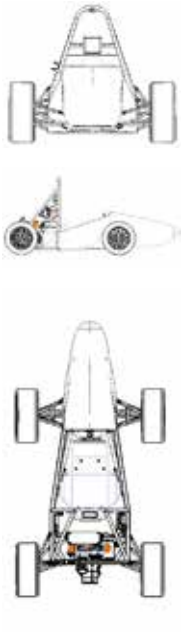
BRAKE : Ductile Iron rotors, Tilton 78 series 5/8" bore master cylinders
COOLING : Side mounted radiator
DRIVE : Single stage planetary gearbox
ELECTRONICS : Custom 22AWG harness, CAN driven power distribution, AEM infinity 10 ECU
EMCAC : Aluminum Bus bars / 472 AH
FR/RR TRACK : 1270mm / 1193.8mm
FRAME : One piece, full composite monocoque
MATERIAL : Toray T700 uni/pw 2510 CFRP prepreg, Hexcel Aluminum Honeycomb
MAXMOTORRPM : 6000
MAXSYSVOLT : 264.6 V
MOTORCNTRLR : Repackaged/Modified UniTek Bamocar D3-400-400-RS
MOTORTYP : Enstroj / EMRAX207 / Medium Voltage CC
NMLMM : Two motors / rear inboard / 64kW peak, 32kW continuous at 5000 RPM
OLWH : 2891mm, 1469mm, 1251mm
SUSPENSION : Double unequal length A-Arms, pull/push rod actuated
TIRE : Hoosier LC0 6.0x18.0-10
TRANSRATIO : 3.71:1 Final Drive Ratio
WEIGHT : 536 lb
WHEELBASE : 1536.7mm

United States

E238 Olin College of Engineering

Olin Electric Motorsports

Olin Electric Motorsports presents Mk. II, our second generation electric vehicle. Completely redesigned and rebuilt from our first vehicle, Mk. II features an improved accumulator and transmission, in addition to a new frame, suspension, and cooling system. By increasing our system voltage to 240V and reducing the complexity of our transmission, we have been able to reduce our vehicle size and weight while increasing performance capabilities. Furthermore, our electrical system has been overhauled for added reliability and simplicity. With a CAN bus to connect all of the printed circuit boards, information travels quickly and seamlessly throughout the vehicle.



BRAKE : Wilwood GP200/PS1 / Tilton 77-Series
COOLING : Forced air accumulator cooling / water cooled motor and controller
DRIVE : Chain drive / Torsen differential
ELECTRONICS : CAN Bus
EMCAC : LiFePO4 / 4.75 kWh
FR/RR TRACK : 50 in / 50 in
FRAME : Steel space frame
MATERIAL : 4130 Chromoly
MAXMOTORRPM : 6000 RPM
MAXSYSVOLT : 266V
MOTORCNTRLR : RMS PM100D
MOTORTYP : EMRAX 228
NMLMM : One / Rear / 100 kW
OLWH : 110 in / 59 in / 48 in
SUSPENSION : SLA Front / Multilink Rear
TIRE : Hoosier R25B 20.5x7 13
TRANSRATIO : 1:4.6
WEIGHT : 550lb
WHEELBASE : 61 in

United States

2017 FORMULA SAE **KEY PLAYERS**

There is a large group of individuals who make sure the numerous details are completed to make a successful event.

EVENT ORGANIZERS - SAE INTERNATIONAL

- Bob Sechler, Manager, Education Relations
- Kaley Zundel, Manager, Collegiate Design Series Programs (FSAE, CSC, Supermileage)
- Sam Barill, Manager, Collegiate Design Series Programs (Baja SAE & Aero Design)
- Amanda Paciorkowski, University Programs Developer
- Sara Guffey, University Programs Associate
- Martha Tress, Manager, Recruitment Sales and Sponsor Relations
- Victoria Ewing, University Programs Associate

SCCA LIAISON

- Clancy Schmidt
- Howard Duncan

FSAE COURSE DESIGNER

- Roger Johnson

TRACK ANNOUNCER

- Raleigh Boreen

TECHNICAL INSPECTORS LEADS - COMBUSTION

- Matt Petty
- Alex Buchka

TECHNICAL INSPECTORS LEADS - ELECTRIC

- Danny Bocci
- Lance Turner

EVENT CAPTAINS

- Brake - Ali Zangeneh
- Noise - Chad Walber
- Tilt - Gary Young
- Pratice - Jim McNeil and Will Hiltebeitel
- Fuel - Janice Hueske
- Scales - Quinten Jordan
- Presentation - Reed Greenwood
- Design - David Redszus and Steve Fox
- Chief Design Judge - Steve Fox
- Cost - Suzy Zukowski, Leo Abels and Steve Taylor
- Acceleration - Tim Gornik and Quinten Jordan
- Skid Pad - Joe Losito
- Autocross - Jacob Homer
- Endurance - Lawrence Raitinger
- Chief National Scorekeeper - Steve Sayovitz

VOLUNTEERS CONFIRMED AS OF MAY 24, 2017

- Leo Abels | Daniel Alexander | Lucas Andrade | Mark Atterbury | Sid Attravanam | Joe Austin | Bob Bailey | Chris Batch | Jason Bennett | Brian Bentley | Aaron Bentley | Michael Black | Dan Bocci | Raleigh Boreen | Velma Boreen | Glenn Bower | Bruce Brinkmeier | Terri Brinkmeier | Ethan Brodsky | Sandi Brown | John Browning | Christian Bryant | Alex Buchka | Sam Buller | John Burfurd | Billy Burkey | Dan Carney | Christopher Carter | Marko Cater | Doc Chaves | David Chegash | Prateek Choudhary | Momanny Chris | Alba Colon | Nathan Crosby | Siddharth Dahiya | Steve Dent | Damon Dilworth | Ben DiMarco | Brian Dondlinger | Mary Donovan | Chris Drew | Stephen Ducharme | Linda Duncan | Howard Duncan | Sue Eckles | Khalid El Salhy | Geoffrey Ewing | Lauren Feekin | Derek Feyerherm | Adam Firestone | Daniel Fitzgerald | Steve Fox | Tri Gaffney | Mayur Gaikwad | Oscar Garcia | Lori Gill | Doug Gill | Rob Giovenale | Billy Godbold | Zachary Goldstein | Cyrille Goldstein | Reed Greenwood | Bruce Gregory | Ken Halvorsen | Michael Haverkamp | Andrew Hegge | Doug Hodgin | Jeff Holm | Jacob Homer | Janice Hueske | Kyle Hugo | Mark Hutchison | Stephen Hydo | Marvin Jaques | Roger Johnson | Sam Johnson | Katelyn Johnson | Alex Jones | Quinten Jordan | Wendy Jordan | Ron Kalkwarf | Charles Kaneb | Donald Knop | Tony Koester | Russ Kromberg | Steve Krug | John Kuzela | Aaron Lane | John LaRandeau | Bob Lembke | Ben Levesque | Todd Lewis | Charles Linn | Joe Losito | Dennis Magnuson | Jerry Magorian | Sean Maloney | Benjamin Martin | Paul May | Dave McCagg | Jim McNeil | Paul Messier | Mark Muddiman | Bhushan Nagarajan | Adam Niner | Jenna Norris | Alex Nurbababyev | Carl Occhialini | Jerry Ohlemeier | Bret Olsen | Nate Palsa | Scott Passmore | Tim Patek | Joe Penniman | Derek Peters | David Petty | Matt Petty | Aratz Pinter | Joe Preston | Lawrence Raitinger | John Rappolt, William Redinger | Craig Redinger | David Redszus | Andrew Reimer | Ryan Richman | Dave Rimel | Neil Roberts | William Rose | Michael Royce | Suzanne Royce | Luke Sagur | Steve Sayovitz | Eric Schieb | Aaron Schmidt | Clancy Schmidt | Mike Scott | Mark Scott | Herb Seubert | Sly Shively | Ana Sopalovic | Baldur Steingrimsson | Tom Strongman | Dennis Sweeney | Jack Takemoto | Steve Taylor | Owen Thomas | Brian Tilley | B. Paul Tunakan | Nachiket Vader | Kelly Van Duyn | Lisa Van Duyn | Kristina Vujic | Mark Walker | Mike Walser | Michael Watson | Hannah Westbrook | Gary Weyers | Dave Wheaton | James Whisler | Witt Widhalm | Dave Williams | Todd Wiltgen | Cydnee Wolfe | Grady Wood | Eric Wortman | Ty Wright | Christian Yaeger | David Yaeger | Tarazkar Yassaman | Gary Young | Ali Zangeneh | Mike Zieman | Susan Zukowski | Aaron Zukowski | Eden Zukowski

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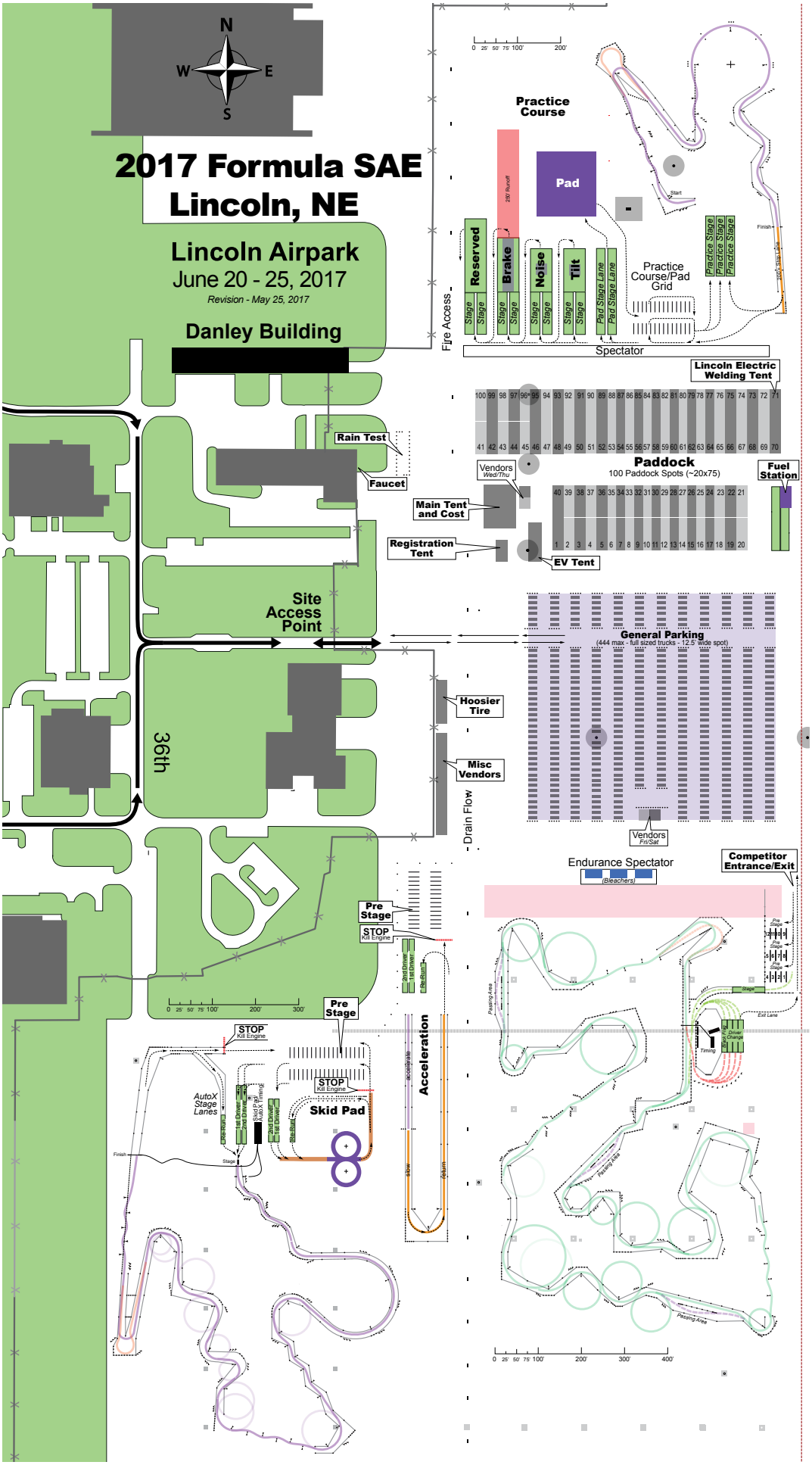
SITE MAP TENTATIVE



OFFICIAL EVENTS

FORMULA SAE MICHIGAN
May 10 – 13, 2017
Michigan International Speedway, Brooklyn, Michigan

FORMULA SAE LINCOLN & FORMULA SAE ELECTRIC
June 21 – 24, 2017
Lincoln Airpark, Lincoln Nebraska

FORMULA SAE AUSTRALASIA
First Competition – 2000
Website: saea.com.au/formula-sae-a/

FORMULA SAE BRASIL
First Competition – 2004
Website: saebrasil.org.br/eventos/programas_estudantis/

FORMULA SAE ITALY
First Competition – 2005
Website: ata.it/content/event-formula-ata/formula-sae-italy-formula-electric-italy-2015

FORMULA STUDENT
First Competition – 1998
Website: formulastudent.com/

FORMULA STUDENT AUSTRIA
First Competition – 2009
Website: fsaustria.at

FORMULA STUDENT GERMANY (FSG)
First Competition – 2006
Website: formulastudent.de/

FORMULA SAE JAPAN
First Competition – 2003
Website: jsae.or.jp/formula/en/

SAE International
400 Commonwealth Drive
Warrendale, PA 15096
sae.org

o +1.724.776.4841
f +1.724.776.0790
e info@sae.org

2016 1st Place EV Class Overall – Czech Technical Univ of Prague