What is the Study of Industrial Technology-Vehicle Design (ITVD)?

The Bachelor of Science degree program in Industrial Technology-Vehicle Design prepares graduates for design, product development, and manufacturing in the automotive, marine, aerospace, composites, and alternative fuel industry. The program uses vehicle research, design, and development projects to educate students, and places special emphasis on power plants, alternative fuels, transmissions, chassis design, and component materials. Students in WWU’s ITVD program have the opportunity to learn in an extremely hands-on environment. Coursework is very project-based, providing practical learning experiences for students.

What kind of job would an Industrial Technology-Vehicle Designer have?

Graduates of this program hold positions with all the major automotive equipment manufacturers and custom car-building companies, as well as positions as stylists. Graduates also work in the marine, aerospace, composites, and trucking industries.

Vehicle designers draft layouts for automobile components, assemblies, and systems using sketches, models, and prototypes from their knowledge of engineering principles, based on automobile function. They determine factors that may affect design proposals by using previous car models, understanding manufacturing limitations, and collaborating with automotive engineers. The work of an auto designer combines artistry with technical and scientific know-how. The finished designs must incorporate aesthetic and functional concerns within the practical framework of business and manufacturing.

Industries of Employment:
- Automotive
- Racing
- Aerospace
- Marine
- Heavy duty vehicle
- Composites
- Prototype design & manufacturing
- CNC machining
- Biofuels
- Trucking

Alumni Employment:

**Positions/Companies:**
- **Stylists at:**
  - Nissan Design
  - GM
  - Volvo
  - Porsche
  - Honda
  - Toyota
- **Performance & Development at:**
  - Honda
  - Toyota Racing
  - Mazda
  - Ford
  - Subaru
  - Brembo Brakes
- **Custom Car Building at:**
  - Metal Crafters
- **OBD Validation Engineer at:**
  - PACCAR Technical Center

Program/Degree Quick Facts:
- **Bachelor of Science in Industrial Technology-Vehicle Design**
- ~12 students per year
- 140 major credits to graduate
- Median salary: $72,284
- Average starting salary: $46,445

Resources:
1. degreedirectory.org/articles/Automotive_Designer_Job_Duties_Career_Outlook_and_Education_Prerequisites.html
2. work.chron.com/kind-education-training-car-designer-need-1343.html
3. degreedirectory.org/articles/What_is_the_Yearly_Salary_of_an_Automotive_Engineer.html
4. based on data collected from survey of past five years of graduates from WWU’s Industrial Technology-Vehicle Design program

To learn more, visit our website: cse.wwu.edu/engd
**Industrial Technology-Vehicle Design (ITVD) Program Information**

The ITVD program has a strong prerequisite course sequence. Students unable to successfully complete foundational math and science courses in their first year may find they are unable to complete the ITVD degree in four years. Additionally, most ITVD courses are only offered once per year, so if a student gets off-sequence with the prescribed course of study, their time to degree completion may exceed four years. Students are encouraged to seek advising from the Pre-major advisor prior to registration.

**Application Process:**

Students must initially declare as a Pre-major in Industrial Technology-Vehicle Design once they begin coursework at WWU. The major application period for the ITVD program is in the middle of Winter Quarter. Students on track with the program will apply during Year Two at WWU. Students must have completed seven prerequisite courses to apply to the full Major (up to two may be in progress at the time of application). Although the minimum grade for all courses in the major is a C-, acceptance to the major is based primarily on academic performance in the prerequisite courses, so maintaining a high GPA in these courses is advantageous. Students must also submit a portfolio of their work on vehicles. Approximately twelve students are accepted into the program each year, and the application process is competitive. For more information on the program admissions process, visit the Admissions page on the ITVD webpage: [cse.wwu.edu/engineering-design/industrial-technology-vehicle-design](http://cse.wwu.edu/engineering-design/industrial-technology-vehicle-design).

**Transfer Students:**

Many of the first year courses for the ITVD program are standard offerings at community colleges, including Calculus, Physics, Chemistry, and some Engineering courses. Transfer students are encouraged to seek advising well before attending Western to ensure coursework will transfer and fulfill program requirements. For students transferring from Washington community colleges and public baccalaureate institutions, Western’s online Transfer Equivalency Guide is a useful tool for assessing courses and equivalencies. Students should expect to spend two to three years at WWU after acceptance into the program.

**What is the Vehicle Research Institute (VRI)?**

Through the Vehicle Research Institute, over 50 vehicles have been built since 1972. Since 1989, developing hybrid electrical and natural gas/biomethane vehicle technology has been a focus of the program. Over $7,000,000 has been raised by the VRI through grants from government, industry, and private individuals. The student teams have set records around Indianapolis Motor Speedway, up Pike’s Peak, and across the Australian Outback with a class win in the 1990 World Solar Challenge. A recent team was the only U.S. university-based team in the finals of the Progressive Automotive X Prize - a $10 million prize to build a 100 mile per gallon car. *Automobile* magazine dubbed Western Washington University’s VRI “very possibly the best school in the country for total car design.” The VRI has also been awarded the EPA’s P3 Award for vehicle emissions and has displayed a vehicle at NASA’s Ames Research Labs in California.

**Society of Automotive Engineers Student Club**

WWU also has two student academic clubs housed within the VRI that compete in national competitions: **WWU Formula SAE** and **WWU SAE Baja** that design, engineer, and manufacture small scale open-wheel formula 1 style cars and Mini Baja cars. Participation on both teams provides excellent interdisciplinary, hands-on learning experiences, along with professional networking opportunities.

For more information on WWU SAE visit: [facebook.com/WWU-Racing](http://facebook.com/WWU-Racing).