

Engineers' News

February 2024

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www.FortWayneEngineersClub.org

Participation in club tours has been on a downward trend. The FWEC cannot sustain facilitating tours without active participation. We encourage any participation by attending tours or volunteering to help plan events surrounding the FWEC. We welcome feedback as well that may help improve the current situation. Send that feedback to Info@FortWayneEngineersClub.Org

Work at a great place? Make an interesting product? Want to share your business with a local group? Host a tour! It's a great opportunity to show your unique workplace! The FWEC board will facilitate any requirements for attendance, date planning, newsletter announcements, etc.. We want to promote your business and show it off to the members of this club!

February Tour

FILL-RITE®



When: Feb. 22, 2024 @ 5:00 p.m.

Where: 8825 Aviation Dr., Fort Wayne IN 46809

Website: <https://www.fillrite.com/>

Details: Fill-Rite Company has a long, successful history in the fuel and chemical transfer spaces. Originally known as Ossian Engineering Company, in 1961 we were renamed Tuthill Transfer Systems. Then in 2022 the Fill-Rite and Sotera brands became part of The Gorman-Rupp Company under the new name Fill-Rite Company. Gorman-Rupp was founded over 85 years ago upon the straightforward philosophy of product quality and technological leadership.

For over 60 years, our red Fill-Rite pumps have been designed and manufactured at our facility in Fort Wayne, Indiana. In 1996, we launched the Sotera brand, providing a line of chemical transfer pumps that supplement many of our end users' needs.

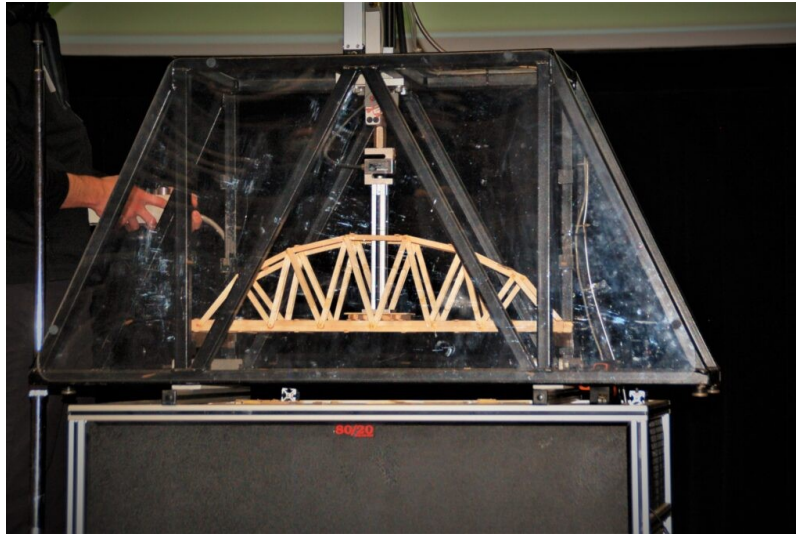
Fill-Rite and Sotera products continue to serve essential industries including agriculture, construction, fleet, municipalities, logging and mining, and many more!

*No sign up required, just show up.

* This tour requires steel toe shoes/boots and safety glasses. Please bring your own if you have them, there is a limited supply of safety glasses and metatarsal guards available at Fill-Rite.

Bridge Building Contest





When: Feb. 24, 2024

Where: Purdue Fort Wayne (Neff Hall Room 101) Park in lot P-4

Details: This event is not a scheduled FWEC tour, however it is a fun event to witness and is open to the public. The competition starts at 9:00 a.m. with high school and continues with middle school at 1:00 p.m.. Your participation is merely as a spectator. Watch the carefully crafted bridges constructed of only popsicle sticks get put to extreme weighted pressure. With a load cell and live data feed back, one by one the students get to witness who's design comes out on top.

January Tour Recap

Ivy Tech - Aviation Maintenance Technology





This tour was a rousing success for all concerned, including potential students (and parents/grandparents) looking for engaging durable careers. Programs leading to FAA certification(s) combined with an Associate of Applied Science degree (AAS) require four full-time semesters (semester = 16 weeks) and currently cost under \$17,000 overall.

Employment in the airliner fields (vs. general aviation) typically starts well in excess of \$50 k/year and usually rapidly exceeds \$100 k even without overtime. Pay is typically on an hourly basis, helping to temper workloads. Overtime is usually available and appreciated by some workers. The facility is a nearly 10 year-old purpose-built building in the northeast corner of Smith Field. It houses classrooms, shops and a large (well heated and cooled) "lab" enclosing a mesmerizing array ranging from a fabric winged taildragger (Cessna 140?) to Sabreliner business jet. Engines galore inhabit the space. All are for hands-on basic training across essentially the entire spectrum. Alternative industries for these certificates routinely include wind energy, railroads, cruise-ships, industrial plants (automation requires upkeep), and various forms of racing vehicles. The curricula and mood suggested momentum and variety. Basic certified abilities include skins and structural components of metal, fiberglass, aramid, carbon fiber, and more. Fabric and dope training are still required by the FAA but may soon be optional. Tests for structural integrity include ultrasound, electro-magnetics, dye penetration, and more (but not radioisotopes). A century of engine variations are spread across the "lab". Training appropriate for full-time workplaces includes applied workplace communication, safety, and regulatory compliance. Electronics cover similar ranges of classroom and "lab" basics.

Aviation utilizes communications, navigation, networking, autopilots, flight management, engine efficiency management, entertainment systems, software, hardware, testing, and research. (A September 2015 FWEC newsletter at fortwayneengineersclub.org covers our tour of a new BAE Systems building near Baer Field. Essentially every nonmilitary jet engine in the "western world" is controlled by a BAES engine module consisting of layers of circuit boards.) Studies may be accessible part-time as early as Junior year in high school, and within walking distance of Northrup High School, but would extend at least a year after high school graduation. Cost for a high school student might be lower depending on many factors, such as potentially transferable funds in lieu of conventional public high school. There is also a Senior Scholars (over age 65) status at Ivy Tech, which is essentially free except for laboratory costs. A "four-year" degree has long been pointless in this field and does not initially affect income. It is legitimately needed for many management levels. The "full" degree would prolong schooling perhaps another 2 years.

Management opportunities can happen sooner than expected. (Ed.: Young people that I steered into this program found management open to them in their mid 20's and reasonably enjoyable.)

One of the “perks” often enjoyed in many of these jobs is ability to taxi and ground test airliners, including engine run-ups. Free or reduced travel is also common. Aviation employers also keep workers updated on advances in technology. Civilian industries often also have drone and/or aerospace concerns. (Ed.: Younger engineers that I know are well along on drones displacing helicopters, new drone and hypersonic fuel/engine concepts, and hoped-for battery revolutions. Standard solar panel arrays may already be out of date.) HELP! A huge challenge for the Aviation Center is obtaining updated aircraft, powerplants, and more as donations. The scrap value of airliners or engines is shocking, and some items are treated as proprietary. Mike Clouse is an instructor and was our tour host. He is an EE from Purdue, the degree being pursued after years doing maintenance, and later teaching continuing training as models of airliners changed. The “maintenance” fields also embody doors into manufacturing of engines or components, being professional instructors, and composing technical materials including manuals/videos. An online subscription to some manuals or engineering references often costs \$100k or more per year. Mike clearly loves his work and is likely available by contacting the facility (260-481-2257). We greatly appreciated his joy and seemingly endless gift of time (unpaid after hours). Initial sources of info include [aviation-maintenance-technology](#) (Ivy Tech's Aviation Center website) and <http://stats.bls.gov/ooh/Installation-Maintenance-and-Repair/Aircraft-and-avionics-equipment-mechanics-technicians.htm>. A suggested curricula is as follows. Not shown is a choice in emphasis between airframe or powerplant skills. Both are available given more time for studies. (Ed.: Our family has found clear suggested sequences of study, such as these, reflect faculty experience and get students graduated on time.) Employment can begin prior to graduation, in part because there is so much demand for these skills.

Ivy Tech Community College
Department of Aviation Maintenance Technology
Cohort Program Schedule

FALL	Course #	Duration	Days	Credits	Course Title
PM	AVIT 141	1st 8 weeks	W,R	2	Aviation Basics I
AM	AVIT 142	2 nd 8 weeks	R, F	3	Aviation Basics II
PM	AVIT 144	16 weeks	M,T	4.5	Aircraft Electricity
PM	AVIT 145	2 nd 8 weeks	W,R	2	Aircraft Ground Servicing
AM	AVIT 146	1 st 8 weeks	M,T	2	Aviation Regulations
AM	AVIT 148	1st 8 weeks	R, F	2	Aviation Materials and Processes
	IVYT 113			1	Student Success in Technology
	COMM 104			3	Workplace Communication
	MATH 122			3	Applied Technical Math
TOTAL				22.5	
SPRING	Course #	Duration	Days	Credits	
AM	AVIT 231	16 weeks	W,R,F	7	Reciprocating Powerplants
PM	AVIT 232	16 weeks	M,T,W	7	Turbine Power Plants
AM	AVIT 237	16 weeks	M,T	4.5	Propellers
PM	AVIT 235	1 st 8 weeks	R,F	2.5	Powerplant Fluid and Indicating Systems
	ENGL 111			3	English Composition
TOTAL				24	
FALL	Course #	Duration	Days	Credits	
AM	AVIT 227	16 weeks	M,T,W	7	Aircraft Sheetmetal
PM	AVIT 246	16 weeks	M,T	4.5	Aircraft Hydraulic & Landing Gear Systems
AM	AVIT 233	1 st 8 weeks	R,F	2.5	Powerplant Fuel and Induction Systems
AM	AVIT 251	2 nd 8 weeks	R,F	3	Engine Cooling and Exhaust
PM	AVIT 252	2 nd 8 weeks	W,R	2.5	Engine Install, Conformity, & Ignition
PM	AVIT 253	1 st 8 weeks	W,R	2.5	Engine Starting System
	PHYS 100			4	Introductory Physics
TOTAL				26	
SPRING	Course #	Duration	Days	Credits	
AM	AVIT 222	16 weeks	M,T	4.5	Non-Metallic Structures
PM	AVIT 226	1 st 8 weeks	W,R	2.5	Airframe Electrical Systems
AM	AVIT 241	1 st 8 weeks	R,F	3	Aircraft Fuel System & Welding Practices
AM	AVIT 245	2 nd 8 weeks	R,F	2.5	Aircraft Systems
PM	AVIT 242	16 weeks	M,T	4.5	Aircraft Inspection and Rigging
PM	AVIT 228	2 nd 8 weeks	W,R	3	Aircraft Instruments and Avionics
	HUMS			3	Humanities/Social & Behavioral Sciences (Elective)
TOTAL				23	

Items of Note

FWEC member Rod Vargo is Chair of the 28 year-old and all-volunteer [Utility Advisory Group](#), which formally advises Fort Wayne City Utilities and often City Council. Your comments are welcome at rodvargo@comcast.net

Volunteer Positions within the Club

Membership and Contact Chair: Open
Northeast Indiana DiscoverE Chair: Open

Vice President:

Club Vice President needed! It's time once again to ask club members to fill this vital spot in the club's leadership roster this year. The Vice President is generally in charge of arranging club tours, though this has traditionally been a team effort so it's not really all that much work. You would be expected to attend the monthly officers meeting (from the end of August until the end of May) and at the end of your one-year term, you would automatically become club president. The typical monthly time involved would be roughly 2 hours (including attending the officers meeting). If you enjoy the club and would like to see it continue to function, please consider volunteering for this spot.

Let us know if you're interested!

Volunteer

General Club Info

Fort Wayne Engineers Club dues are \$0. Donations are welcome but strictly voluntary. In recent years, club funds have helped support Discover-E, the Regional Science and Engineering Fair, annual bridge building contests in schools, academic awards, networking events, mentoring, our website, and facilitating free tours.

Please see FortWayneEngineersClub.org, [LinkedIn](#), or [Facebook](#) for updates on current Club activities, other news, and past newsletters.

Those participating in activities or hosting tours through FWEC do so strictly at their own risk, including disease exposures. Participation in club events is voluntary, free, nonprofit, and solely for the benefit of participants and the community at large. Anyone with an interest may participate unless restrictions are specified for specific events, such as minimum age or minimum safety attire.

Interested in hosting a tour?

Contact us today!

Host a Tour

FWEC Roster for FY2023-2024

President: Nathaniel Wisel

Vice President: *Open*

Secretary: Rod Vargo

Treasurer: John Magsam

First-year Board Members: Dave Gordon, Bert Spellman

Second-year Board Member: Ryan Stark, Ed Woodward

Third-year Board Member: Marna Renteria, Mike Magsam

Editor of Engineer News: Nathaniel Wisel

Membership and Contact Chair: Open

Northeast Indiana DiscoverE Chair: Open

Vice President: Open for FY2023-2024

Job posting and resumes listed

The club accepts both job openings from around the area, as well as resumes from those seeking employment. Please submit these to the following email address:

Info@FortWayneEngineersClub.org

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