



Michigan Advanced Technician Training - MAT²

ZF North America, Inc. – Sophie Stepke



German Dual Education Training

- 2-3 years rotation within school, lab and work (70/30 training at work and training at school)
- Same curriculum for each profession across the nation
- Titles are professional baker, photographer, brick layer, gardener, doctor's assistant, kindergarten teacher, carpenter, industrial business management assistant, banker, etc.
- Close cooperation between industry and academia
- Final testing at the end of the program
- Graduation with 3 years associate degree (professional state certificate)
- Tuition and work hours are paid by employer
- Nationwide recognized degree



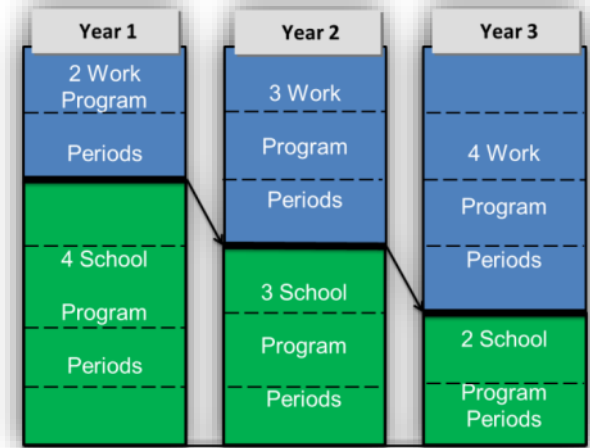
MAT2 – Michigan Advanced Technician Training Program

- Developed in: 2012-2013
- Developed by: Industry, Community Colleges, State of MI, Consultancy
- 3 years school work period with 3 components:
 1. Theory
 2. Practical instructions
 3. Work experiences
- First cohort (Mechatronic) started in 2013 & graduated in 2016
- Core Values: competency based, cohort, industry driven
- Associate degree, DoL certificate and a company certificate



MAT2 – Michigan Advanced Technician Training Program

- Tuition and hourly wage paid by employers
- Rotation cycle: 8 weeks, 2/3 or 3/2 school work cycle
- Testing at the end of the program
- Same curriculum for each profession
- Students commit for 2 years after graduation to employer



MAT2 – Michigan Advanced Technician Training Program

Selection process

- Marketing for the programs through roadshows, presentations, publications
- Applicants are preselected
- Selection from the employer side through company fairs, interviews



MAT2 – Michigan Advanced Technician Training Program

Costs

- Stipend
- Wages
- Tuition

MAT ² Investment Model				
	Tuition	School Stipend (\$200/week)	Wages	Totals
Year 1	\$10,000	\$6,400	\$9.00/hour \$5,760	\$22,160
Year 2	\$6,000	\$4,800	\$10.50/hour \$10,080	\$20,880
Year 3	\$4,000	\$3,200	\$12.00/hour \$15,360	\$22,560
TOTAL	\$20,000*	\$14,400	\$31,200	\$65,600

**Tuition rates may be less by state region.*

Programs

- Mechatronic
- Technical Product Design (TPD)
- IT
- CNC



MAT2 – Michigan Advanced Technician Training Program

Benefits for industry

- Curriculum is designed by industry for current industry needs
- Develop own talent, “grow your own” employees
- At the end of the program students have three years of experiences within company
- Two years commitment after graduation
- High commitment and loyalty of employees to company
- Train and support new employees with the support of local community colleges
- High quality competency based education
- Increase of professionalism within company
- Increase of reputation and image of company
- Future employees can offer both soft and hard skills



MAT2 – Michigan Advanced Technician Training Program

Benefits for community colleges

- Higher graduation rate
- Future / reality oriented learning and teaching
- Strong connection with the industry

Benefits for students

- Opportunity for a career and not “just a job”
- Hands on learning
- Free education
- Testing the waters



Mechatronic Technician

Mechatronics is the combination of electrical, mechanical, and electronic competencies to identify, analyze, and solve systems-based problems.

A Mechatronics Technician is a skilled individual, able to combine these competencies to solve systematic problems, while also providing basic solutions using a holistic approach.

A Mechatronic Technician must be able to support engineers, modify machines, make minor changes, repair, test and provide maintenance for related equipment.



Mechatronic Companies in the program

- Avon Automotive
- B&P Manufacturing
- Benteler
- Borg Warner
- Brose North America, Inc.
- Cadillac Castings, Inc.
- Durr Systems Inc.
- DTMB
- EATON
- EMAG LLC
- FIAMM
- Flowserve
- Frimo
- FTE Automotive USA Inc.
- Heller
- HTI Cybernetics
- Humphrey Products
- Hutchinson
- Kalkaska Screw Products
- Kautex Machines, Inc.
- New Center Stamping
- Numalliance North America Inc.
- Onodi Tool & Engineering
- Rec Boat Holding Inc
- Skilled Manufacturing - Aerospace
- Skilled Mfg, Inc.
- SL America
- Superior Spindle Service, LLC
- Thyssenkrupp System
- X-L America
- ZF



IT Technician

MAT2 IT Technicians will utilize cutting-edged skills across software development, infrastructure, and IT security.

Graduates will be competent in the technical, business, and customer areas of the IT industry, and will be able to successfully navigate and adapt to the dynamic technology landscape.

The MAT2 IT program provides a unique approach, allowing students to progress beyond entry-level positions as they move through the program, while eventually choosing an area of specialization.

“**Software track**” students will be prepared for a role as a junior back-end and front end developer or data analyst.

“**Infrastructure**” students will be qualified for roles as server, database, and applications admins.

“**IT security**” students will be qualified for roles monitoring and diagnosing security threats.

All MAT2 IT Technicians will be able to install, troubleshoot, maintain and update technologies, and communicate to both internal and external customers.



Technical Product Design Technician (TPD)

The MAT2 Technical Product Design program prepares individuals to take on job duties that are involved in designing new products or modifying existing products to gain efficiencies that will permit lower cost production or faster customer reaction time.

The MAT2 program prepares these individuals to meet deadlines and work within budgets while developing designs with colleagues and clients.

Supported by foundational skills in materials and manufacturing/production methods, program participants are expected to become competent in the use and creation of internal and client presentations, 2-D drawings, technical documentation, 3-D models and computer simulations to express the design/manufacturing intent and make any modifications that emerge.



CNC Manufacturing Technician

MAT2 CNC Manufacturing Technicians will be able to set-up, operate and produce high quality products on Computer Numerically Controlled Machine Tools.

Graduates will be competent in the technical, business, and customer areas of their industry, and will be able to successfully navigate and adapt to this dynamic technology landscape.

A solid foundation developed over the course of the program will include blueprint reading, gauging, and inspection, statistical process control, mathematics, safety, machine tooling and core CNC competencies.



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MAT2 Programs and Colleges

Computer Numerical Control (CNC)

Delta College

Henry Ford College

Kalamazoo Valley Community College

Information Technology (IT)

Lansing Community College

Oakland Community College

Mechatronics

Baker College of Cadillac

Henry Ford College

Macomb Community College

Oakland Community College

Technical Product Design

Macomb Community College

Mott Community College





Locations:

- Northville, MI – Research and Development Center for the Region North America
- Lapeer, MI – production plant for C-Division

Students:

Field & Year	Year 1	Year 2	Year 3	Graduates
Mechatronic	1	4	2	2
TPD			1	
IT		1	2	

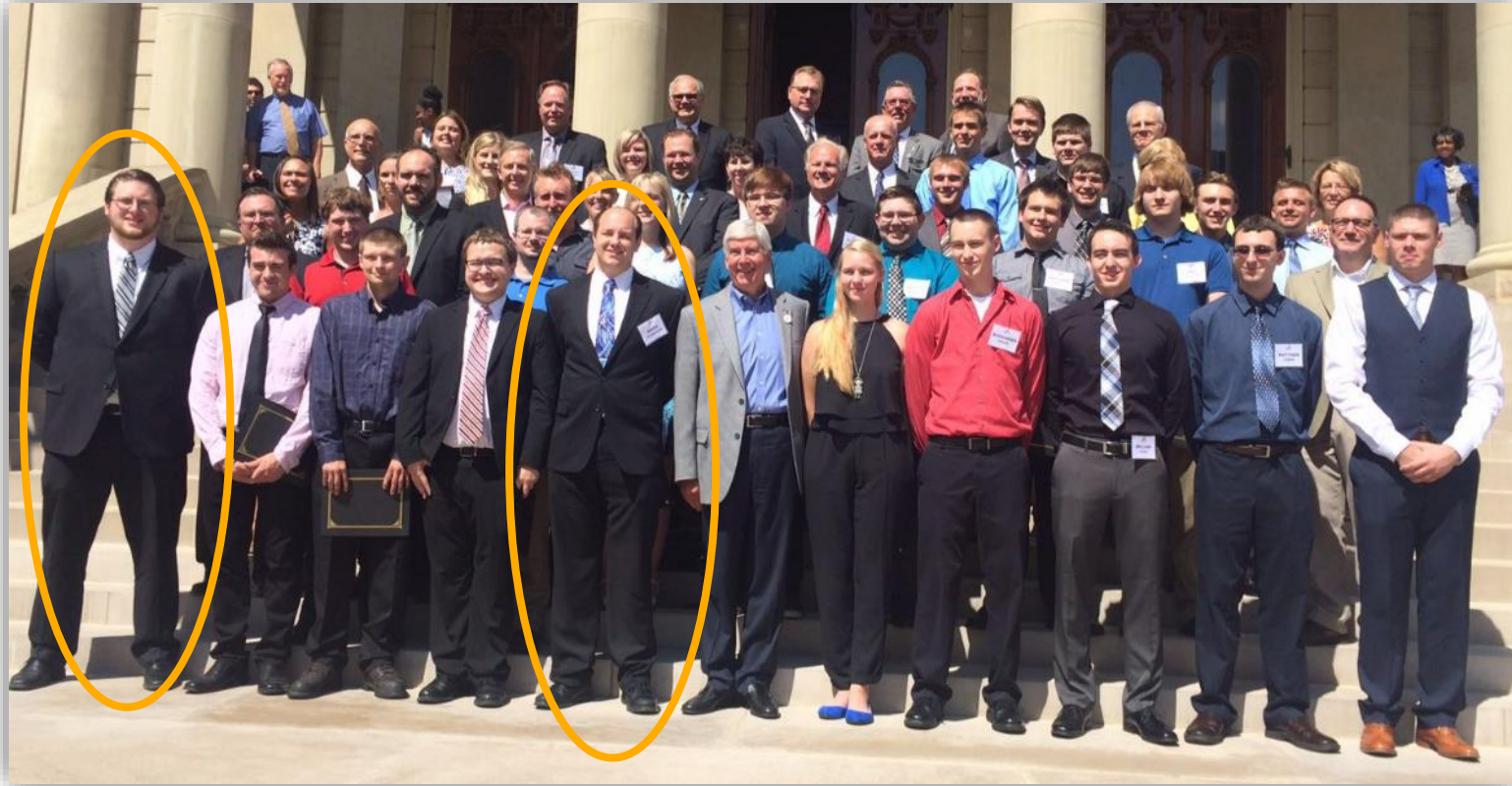


Graduation of first Mechatronic Cohort

- 2 ZF apprentice graduated officially July 13, 2016 from the MAT2 program as Mechatronic Technicians
- Both graduate with:
 - **Associate Degree** of Applied Science, Multi-Skilled Manufacturing (Mechatronic) Maintenance (60 credits)
 - **DIHK certificate** in Mechatronic – which is a certificate that represents the industry standard in Germany
 - Will receive a certificate from the **US DoL Registered Apprenticeship**
- Both have been hired into the organization as **Test Technicians** and are working in Northville



Graduating Class



Impressions of the Ceremony



One last thought...

- MAT2 is existing in other states too
 - ICAT in Illinois
- Lots of in-house solutions are developed right now
 - MTU and ZF in South Carolina
- Industry is interested in competency based education
- If you are interested to have a program like this in your location
 - ...and you don't want to reinvent the wheel...
 - Talk to the other educational providers or industry
 - But definitively do not reinvent the wheel!!!!

