

School of Engineering and Technology



CENTRAL MICHIGAN
UNIVERSITY

School of Engineering and Technology

Faculty (23 Full-Time, 6 adjunct)

Mechanical Engineering Technology

Daniel M. Chen*, PhD
Shaopeng (Frank) Cheng, PhD
Molu O. Olumolade, PhD

Industrial Technology Management-Design

David S. Kelley, PhD
Soo-Yen (Samson) Lee, PhD

Industrial Technology Management-Manufacturing

David A. Lopez, DBA
Benjamin E. Ritter, MA
Dru M. Wilson, PhD

Construction Management

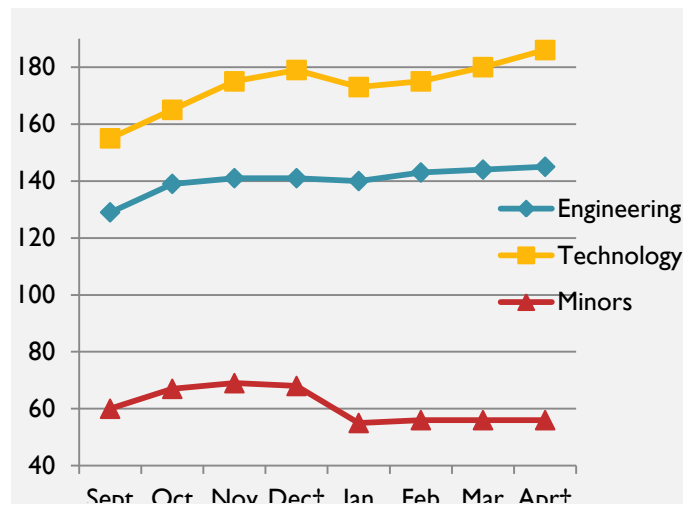
Alan D. Papendick, EdD
Bruce E. Frost, MBA

Mechanical and Biomedical Engineering

Ebrahim Asadi, PhD
Daniel M. Chen, PhD, PE
Brian P. DeJong, PhD
Joseph E. Langenderfer, PhD
Kristina Lemmer, PhD
Terence P. Lerch, PhD
Mohamad S. Qatu, PhD, PE
Jinxiang Xi, PhD

Electrical and Computer Engineering

Ahmed Abdelgawad, PhD
Qin Hu, PhD
Tolga Kaya, PhD
Adam Mock, PhD
Albert C. Peng, PhD
Kumar Yelamarthi, PhD

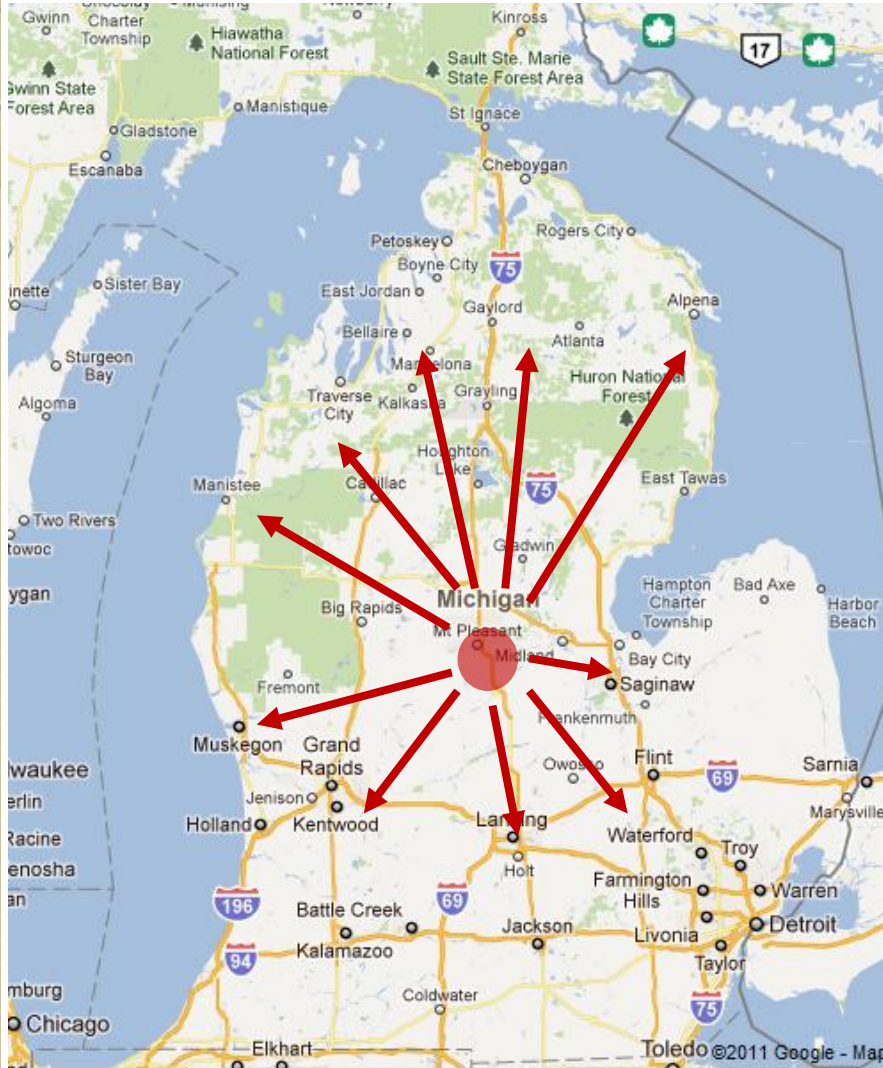


Enrollment

Engineering	Apr '12
Electrical Engineering*	63
Mechanical Engineering*	82
Computer Engineering (New)	
Biomedical Engineering Conc. (New)	
ENGINEERING TOTALS	145
Technology	
Construction Mgmt	74
ITM: Manufacturing	17
ITM: Mechanical Design*	18
Mechanical Engineering Tech*	77
Others (Industrial Ed, Automotive)	20
TECHNOLOGY TOTALS	186
Program Minors	
Industrial Safety	17
Industrial Technology	23
Other (Ind Ed, ..)	25
MINORS TOTALS	56
Graduate Program	
Management & Technology	9
(possible on-line concentration Engineering Management)	

- Computer Science and Information technology are currently outside the school

Central Michigan



- Central, we mean it!
- Compact campus
- Small classes
- Direct interaction with faculty

Engineering and Technology Facilities and Labs

Labs

Engage in research in any of the CMU School of Engineering and Technology labs.

Mainly Teaching Labs

Lab Name	ET Building Room	Lab Director
Automotive	105	Mohamad S. Qatu
Automation/Robotics	123	Frank Cheng
Computer Applications	230	David S. Kelley
Construction	151	Alan D. Papendick
Dynamic Systems/Instrumentation	142B	Brian P. DeJong
Electrical Engineering Circuit & Computer Lab	220	Qin Hu
Electronic Circuit Laboratory	224	Adam Mock
Engineering Design	140	Mohamad S. Qatu
Integrated Circuit Design	136	Kumar Yelamarthi
Introduction to Engineering Lab	145	Brian P. DeJong
Metals/Machine Shop	129	Benjamin E. Ritter
Plastics	125	Dru M. Wilson
Solid Mechanics/Body Scanner	115	Terence P. Lerch
Wind Tunnel/Thermo-fluids	139	Kristina Lemmer

Mainly Research Labs

Lab Name	ET Building Room	Lab Director
Biomechanics	119	Joseph E. Langenderfer
Circuits and Systems Exploration (CASE)	222	Kumar Yelamarthi
Materials Testing & Microfabrication Lab (MTML)	127	Tolga Kaya
Microelectronics	121	Qin Hu
Optics	121	Adam Mock
Plasma	145	Kristina Lemmer
Vibrations	103	Mohamad S. Qatu

Of particular interest:

- * Machine shop
- * Automation Robotics
- * Automotive
- * Plastics
- * Computer Applications
- * Solid Mechanics
 - Material Testing



Build Relations with Industrial Partners (Internships)

- Provide internship opportunities for our students
 - More than 200 engineering and technology students (most in engineering and technology areas related to manufacturing) available in the summers for possible summer internship.
 - Some internships can evolve into a senior project (where the students, with a team, can work on for 9 months during their senior year)
 - Many internship can evolve into full-time positions
 - Internship contact :
 - Technology: Dr. D.Wilson
 - Engineering: Dr. M. Qatu, T. Lerch



Build Relations with Industrial Partners

- * Developing a merit-based scholarship
 - For example “ ----- Award of Excellence in Engineering and/or Technology”
 - \$2000-4000 /year
 - One or multiple year commitment
 - Discipline specific
 - Student standing specific (sophomore, Junior, ...)
 - Merit – based or special status specific
- * Provide collaboration between our faculty and industry
 - Research or development projects with faculty members
 - Summer internship for faculty members
 - Training classes
- * Serving on industrial advisory board
 - Input on programs and curriculum
 - Required for ABET and ATMAE accreditation (employer surveys, ...)

Industrial Senior Projects

- Industrial-based senior projects
 - Help get CMU more engaged with the industrial community
 - Help our faculty become aware of challenges in the community
 - Help our community become aware of skills at CMU
- Industrial-based senior projects
 - Looking for industrial partners
 - Only material cost (if needed)
 - Industrial setting (setting goals, timelines, ...)
 - Teams of students (4-6 students per team)
 - One faculty advisor
- 5-7 Projects (and teams) per year
- For 2012-2013, we have accepted 2 Morbark projects

Success

Best Baja team in Michigan

CMU

CENTRAL MICHIGAN
UNIVERSITY

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BAJA Team at CMU (Illinois)

Rank	Car No	School	Team	Overall (1000)
1	3	Universite Laval	Alerion	919.61
2	5	Ecole De Technologie Superieure	ETS Motorsports	885.05
3	8	Univ of Maryland - Baltimore County	UMBC Racing	851.39
4	4	Oregon State Univ	Beaver Racing	826.35
5	83	Queen's Univ - Ontario Canada	Queen's Baja SAE	816.06
6	32	Ohio Northern Univ	Polar Bear Racing	814.19
7	25	Univ of Wisconsin - Madison	Bucky Baja	784.66
8	1	Rochester Institute of Technology	RIOT Racing	778.51
9	10	North Carolina State Univ - Raleigh	Wolfpack Motorsports	778.40
10	34	SUNY - Stony Brook	Stony Brook Motorsports	768.80
11	101	Central Michigan Univ	Chippewa Performance	767.74
12	36	Universite de Sherbrooke	Sherbrooke Racing Team	753.56
13	96	Univ of Louisville	Speed Motorsports	732.95
14	41	Purdue Univ - W Lafayette	Outlaw	729.03
15	60	Univ of Windsor	Lancer Motorsports	725.86



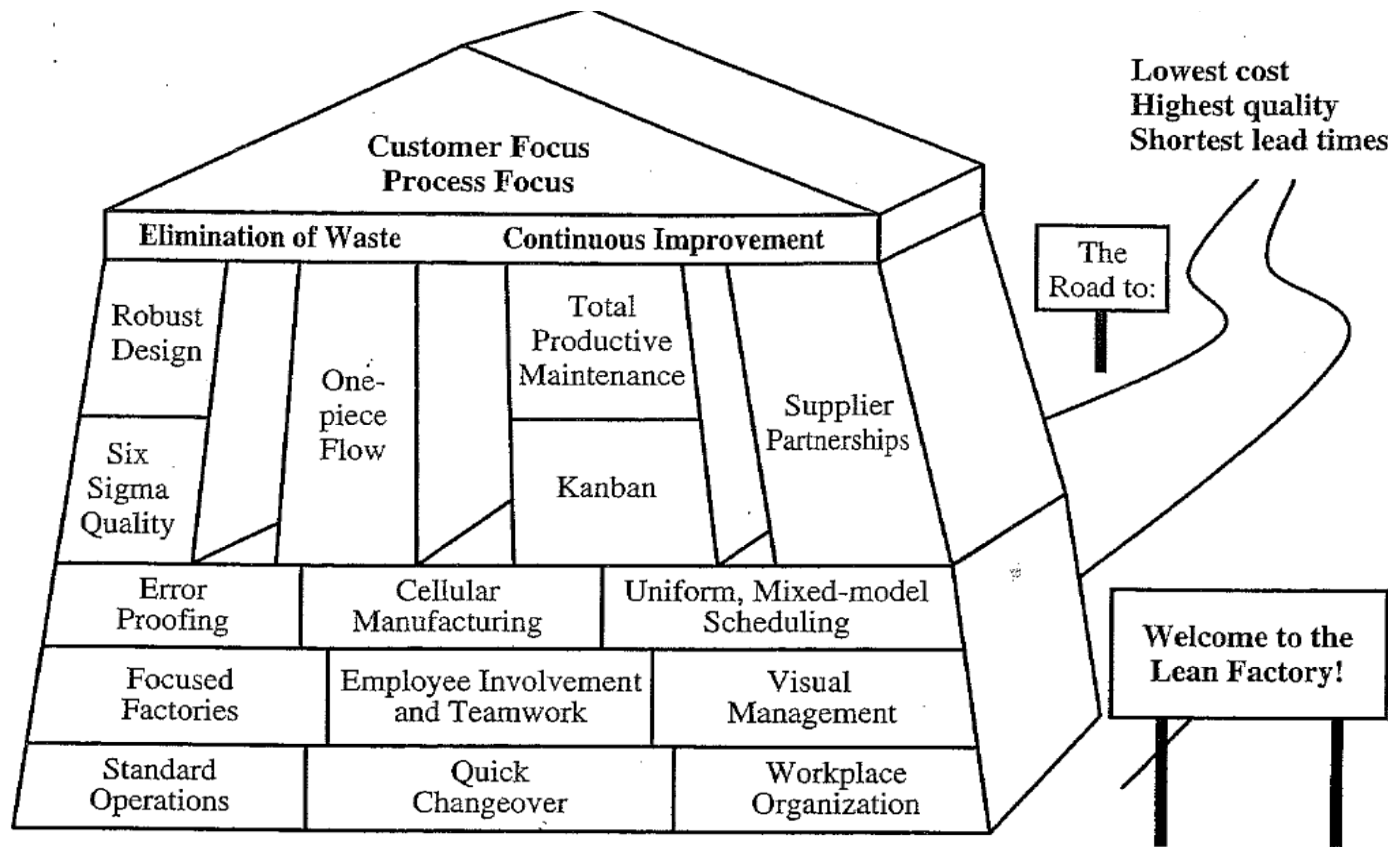
**Central
Michigan Univ**

**Chippewa
Performance**

Manufacturing Experience

- Expertise in
 - Lean Manufacturing
 - Six Sigma
 - Industrial Safety
 - Quick response
 - Tool Design and GD&T
- Faculty members who teach in these fields
 - Dr. David Lopez
 - Dr. Molu Olumolade
 - Dr. David Kelley
 - Others

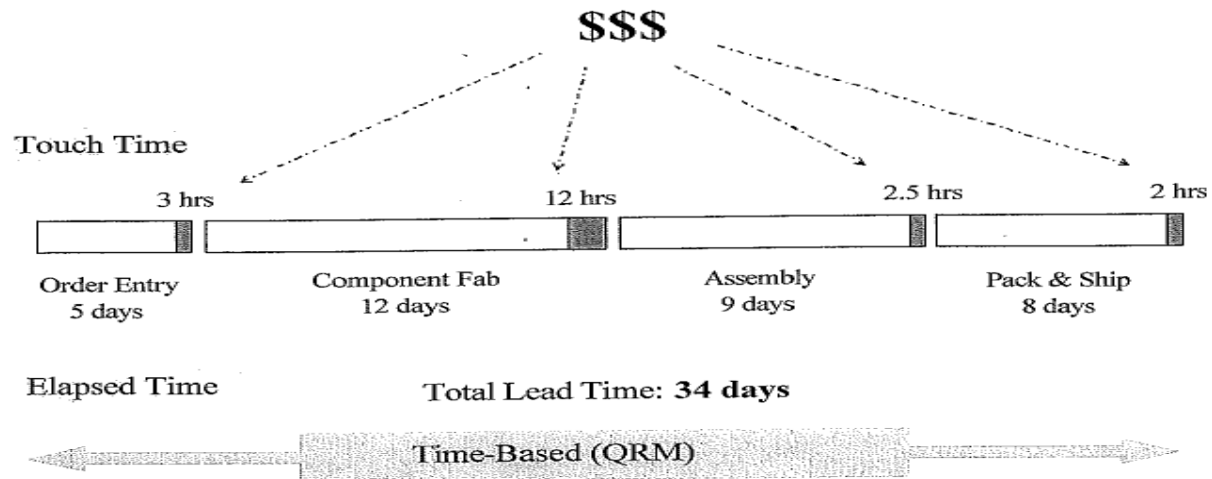
Lean Manufacturing



The Portal to Lean Production

Quick Response Manufacturing (QRM)

- Emphasizes the benefits of reducing internal and external lead times. Shorter lead times improve quality, reduce cost, and eliminate waste
- Some Principles
 - Single focus on lead time reduction
 - Focus on manufacturing enterprises
 - Clarification of the misunderstanding & misconceptions manager have about how to apply time-based strategies
 - Company wide approach – factory, office, supply chain
 - Use cellular structure throughout



Student Organizations

- **SME (Society of Manufacturing Engineers)**
- **ASME (American Society of Mechanical Engineers)**
- **SAE (Society of Automotive Engineers)**
- **IEEE (Institute of Electrical and Electronics Engineers)**
- **SWE (Society of Women Engineers)**
- **EWB (Engineers Without Borders)**