

Curriculum Vitae

KEVIN R. COOK

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Education: B.S. Mechanical Engineering Technology, Montana State University, 1984
M.S. Industrial and Management Engineering, Montana State University, 2003

Professional Registrations: Registered Professional Engineer, State of Montana (#13525PE)

Montana State University Experience:

<u>Department of Mechanical and Industrial Engineering (M&IE)</u>	<u>Bozeman, MT</u>
<i>Professor – Mechanical Engineering Technology</i>	<i>9/20 to present</i>
<i>Associate Professor – Mechanical Engineering Technology</i>	<i>9/11 to 9/20</i>
<i>Assistant Professor – Mechanical Engineering Technology</i>	<i>8/05 to 8/11</i>
<i>Adjunct Associate Professor – Mechanical Engineering Technology</i>	<i>6/03 to 8/05</i>
<i>Adjunct Assistant Professor – Mechanical Engineering Technology</i>	<i>8/95 to 6/03</i>

- Lead curricular assessment and evaluation activities for the MIIE Department
 - Provide quality classroom and laboratory instruction within the Department of Mechanical and Industrial Engineering (M&IE)
 - Develop new course and laboratory material in support of Mechanical Engineering Technology (MET) curriculum
 - Utilize research and creative activities to improve teaching and student learning
 - Support the department, college, and university through service activities
 - Serve on state and national technical and education committees
 - Advise undergraduate students in the MET program
 - Serve as Undergraduate Curriculum Coordinator for the M&IE Department
 - Serve as MET program coordinator for the M&IE Department
 - Support accreditation requirements within the MET program
 - Interact with and support student concerns on a day-to-day basis
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Industrial Experience

<u>Montana Design Services - 5/96 to 8/2008)</u>	<u>Eureka, MT</u>
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Private Consulting

- Performed various engineering consulting activities for a small design firm related to sawmill equipment design and improvement, industrial dust collection, manufacturing process enhancement and conveyor equipment design.

<u>Gibson Guitar Company - Montana Division - 1/95 to 8/95</u>	<u>Bozeman, MT</u>
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Engineering Manager

- Managed day to day activities of the production support staff
- Designed and implemented production enhancement tooling and equipment
- Developed and implemented a quality improvement program
- Managed maintenance and improvements to the physical plant
- Lead design team responsible for product enhancements and new product development

Industrial Experience – cont.:**Boeing Commercial Airplane Group - 737/757 Airplane Tooling Organization****Renton, WA*****Tool Engineering Supervisor - 6/92 to 1/95***

- Provided tool engineering resources and expertise to integrated product definition teams developing the next generation 737 airplanes
- Developed and administered the schedule, budget, and objectives of the next generation 737 body structures tool engineering project
- Developed and implemented process improvement opportunities
- Served as a member of the Montana State University Industrial Advisory Board
- Served as Renton Tool Engineering Training Focal and College Relations Representative
- Instructed a course in Managing for World Class Competitiveness

Supervisor - Special Assignment to Montana State University - 8/91 to 6/92

- Developed and instructed a senior level course in Tool Design (MET 448)
- Developed and instructed a Basic Manufacturing Processes Lab (MET 256)
- Developed and instructed an Advanced Manufacturing Lab (ME 480)

Specialist Engineer / Design Lead - 12/90 to 8/91

- Assigned jobs to designers, monitored progress, facilitated problem resolution and provided design support and expertise
- Designed special purpose tooling for efficient airplane manufacture - utilizing conventional and CAD techniques
- Participated on numerous Quality Improvement Teams

Senior Engineer - 11/87 to 12/90***Engineer - 3/85 to 11/87***

- Designed special purpose tooling for efficient airplane manufacture - utilizing conventional and CAD techniques
- Investigated and resolved tooling related problems
- Provided CATIA (CAD system) expertise to designers, investigated CATIA system problems and coordinated resolution
- Assigned as Project Team Leader of an interdivisional team chartered to develop standards and procedures for the use of CATIA in all Boeing Commercial Airplane Tool Engineering Divisions
- Participated on a Design/Build Team in a new product development group. Developed design concepts, provided manufacturability input, provided process input on product manufacturing plans

Courses Taught at Montana State University:

- ETME 498 / MET 476 – MET Internship
- ETME 492 / MET 470 – Special Projects
- ETME 425 / MET 465 – Building Systems
- ETME 422 / MET / ME 454 – Heating, Ventilating, Air Conditioning, and Refrigeration (HVAC&R)
- ETME 424 / MET 455 – HVAC&R Lab
- ETME 415 / MET 449 / ME 448 – Design for Manufacturability and Tooling
- ME 448 – Design of Tools
- ETME 341 / MET 345 – Machine Design and Machine Design Lab
- ETME 400 / MET 401 – MET Senior Seminar
- ETME 340 / MET 340 – Mechanisms and Mechanisms Lab
- ETME 215 / ME 255 – Manufacturing Processes
- ETME 216 / MET 256 – Manufacturing Processes Lab
- ETME 100 / MET 101 – MET Freshman Seminar
- EIND 371 – Introduction to Computer Integrated Manufacturing
- EMEC 103/ MET 119 – CAE I: Engineering Graphics Communications
- ETME 203 – Mechanical Design Graphics

Scholarship Activity Interests:

- Development of course specific instructional materials
- Coordinating and providing design/build service support to researchers and research centers
- Curriculum improvement through development of new lab equipment and learning procedures
- Curriculum improvement through development of interactive learning and teaching techniques
- Directing and leading assessment of program level effectiveness
- Mentoring new academic professionals to improve teaching effectiveness
- Engineering and engineering technology education improvement
- Growing my own engineering expertise through professional development activities

Publications:

- Hayhola, C., Cook, K., Schell, W. "Focused Curricular Activities Designed to Improve Student Competency in Data Driven Process Improvement", *Proceedings of the 2021 ASEE Annual Conference and Exposition*, Long Beach, California, 2021
- Cook, K., "Development of Modular Fixturing Lab Kits to Enhance Design for Manufacturing Learning", *Journal of Engineering Technology (JET)*, Spring 2020.
- Cook, K., Larson, R., Miller, D. "Using Lean Principles to Improve an Engineering Technology Assessment Process", *Proceedings of the 2018 ASEE Annual Conference and Exposition*, Salt Lake City, Utah, 2018.
- Fisher, K., Cook, K., "Teaching Problem Solving in Engineering using Analysis and Simulation," *Proceedings of the 2011 ASEE Annual Conference and Exposition*, Vancouver, British Columbia, 2011
- Cook, K., Adam, S., Anderson, S., Goeres, D., Walker, D., Cunningham, A. "Implementing a Formal Collaborative Mechanical Engineering Technology Internship Program with Campus Research Activities" *Proceedings of the 2010 ASEE Annual Conference and Exposition*, Louisville, Kentucky, 2010.
- Cook, K., Larson, R., "Mechanical Engineering Technology Senior Year Course Integration Model", *Proceedings of the 2008 ASEE Annual Conference and Exposition*, Pittsburgh, Pennsylvania, 2008.
- Cook, K., Larson, R., Fisher, K., "Mechanical Engineering Technology Curriculum Enhancement: A Process Review of Program Level Change", *Proceedings of the 2007 ASEE Annual Conference and Exposition*, Honolulu, Hawaii, 2007.
- Fisher, K., Cook, K., "Improving Learning of Engineering Graphics from a through a Combination of Techniques," *Proceedings of the 2007 ASEE Annual Conference and Exposition*, Honolulu, Hawaii, 2007.
- Cundy, V.A., Cook, K.R., Cox, D.R., Larson, R.E. and Martindale, W.R., "Mechanical Engineering Technology Curriculum Revision Experiment at Montana State University", *2000 International Mechanical Engineers Congress & Exposition (IMECE), MET Department Heads Committee (METDHC)* Orlando, FL, Nov. 2000.
- ETME 415 (Design for Manufacturing and Tooling Course) - Supplemental Text (MSU use only), 1992 (revised 2002, 2004, 2008, 2010, 2012).
- ETME 425 (Building Systems Course) – Supplemental Text (MSU use only), 2004 (revised 2010, 2012)
- Marley, R.J., Cook, K.R., Gebhardt, A.J., Sharp, C. and Wine, D. L., "Dynamic Wrist Strength" *XIVTH Annual International Occupational Ergonomics and Safety Conference* '99, Orlando, FL, 1999.

Conference Presentations:

- Using Lean Principles to Improve an Engineering Technology Assessment Process, Salt Lake City, Utah, 2018, *ASEE Annual Conference and Exposition*
- Automation 101, Bozeman, Montana, September 12, 2017, *Getting Started with Technology and Automation Workshop*
- Incorporating Lean Manufacturing Techniques into any Business Model, Helena, Montana, November 8, 2013, *Joint Engineers Conference*
- Teaching Problem Solving in Engineering using Analysis and Simulation, Vancouver, B.C., 2011 *ASEE Annual Conference and Exposition*
- Development of a Biofilm Coupon Holder and Sampling Test Kit, Bozeman, Montana, 2010, *Montana Biofilm Science & Technology Meeting*
- Implementing a Formal Collaborative Mechanical Engineering Technology Internship Program with Campus Research Activities, Louisville, Kentucky, 2010, *ASEE Annual Conference and Exposition*
- Mechanical Engineering Technology Senior Year Course Integration Model, June, 2008, Pittsburgh, Pennsylvania, 2008, *ASEE Annual Conference and Exposition*

- Mechanical Engineering Technology Curriculum Enhancement: A Process Review of Program Level Change, June 25, 2007, Honolulu, Hawaii, *ASEE Annual Conference and Exposition*.
- Improving Learning of Engineering Graphics through a Combination of Techniques, June 26, 2007, Honolulu, Hawaii, *ASEE Annual Conference and Exposition*.

Curricular Activity / Projects:

- Cook, K. (Fall 2021 release). *Design and Manufacturing Fundamentals to support Product Build*. (Text to support ETME 415 course at Montana State University)
- Cook, K. *Improving Educational Quality, Increasing Throughput, Decreasing Cost - Improving Manufacturing Lab Education in M&IE*, Proposal for expenditure of State Allocation of Performance Funding (MSU) (June 18, 2014- June 30, 2015). **Funding: \$79,078.00**

Completed Research Activities

- Foreman, C. (Principal), Cook, K. (Co-Principal), "Eradication of Microbial Contamination in Metal Working Fluids," Sponsored by National Science Foundation (NSF). (September 1, 2018 - August 31, 2021). Grant #: W7405. **Current Funding: \$316,495.00**
- Foreman, C. (Principal), Cook, K. (Co-Principal), "Engineering systems for the eradication of biofilms in metal working and machining fluids," Sponsored by National Science Foundation (NSF). (September 1, 2016 - August 31, 2017). Grant #: W6283. **Funding: \$50,000.00**
- Goeres, D. (Principal), **K. Cook**, (Co- Principal), Cunningham, A., (Co-Principal), Warwood, B., (Collaborator) "Research Support for Standardizing a Comprehensive Biofilm Efficacy Test System", Montana Board of Research and Commercialization Technology, (06/01/09 to 06/31/11), **Funding: \$185,190.**
- Amende, K. (Principal), Cook, K. (co-Principal), Larson, R. (Co-Principal) "Thermal Processes Related to Heat Exchanger Tubes", American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE), Student Undergraduate Project Grant, Phase I proposal. (09/01/09 to 5/05/10). **Funding: \$5000.00**

Service Activities:

National:

- TAC of ABET Program Evaluator, accepted 2018, certification completed May 2019, Observation Visit completed September, 2019, October 2020, November 2021
- Voting Member, ASEE Engineering Technology Division Leadership Team
- Vice-Chair for ASEE Annual Programs for the Engineering Technology Division, 2019 - 2020
- Assistant Vice-Chair for ASEE Annual Programs for the Engineering Technology Division, 2018 – 2019
- Moderator, Engineering Technology Division, ASEE, 2018 and 2019
- Past Chair (2012-2014), Chair (2010-2012), Vice Chair (2008-2010), Secretary (2007-2008), Mechanical Engineering Technology Departments Heads Committee (METDHC), American Society of Mechanical Engineers
- Member-at-Large (2019-2021), Mechanical Engineering Technology Departments Heads Committee (METDHC), American Society of Mechanical Engineers
- Member, ASME Center for Education Board of Directors, 2008-2012
- ETD Mini-Grants Review and Selection Committee, 2019
- ASME Ben C. Sparks Medal Selection Committee, 2015 - 2018

State:

- Chair, (2015-present), Vice Chair (2013-2014), ASME, Montana Senior Section
- Registered Professional Engineer, State of Montana, License # 13525PE

University:

- M&IE Department Curriculum Coordinator, Montana State University (2016-present)
- College of Engineering representative on the University Curriculum & Programs Committee
- M&IE Professor Search Committee Member, 2013 – 2014 and 2018 - 2019
- Academic Reading Course Guest Lecturer, Bozeman Senior High School, 2016 - 2018
- College of Engineering Promotion & Tenure Process Review and Revision Committee Member (2017-2018)
- College of Engineering Academic Integrity Policy Development Team Member (2016)
- Mechanical Engineering Technology Program Coordinator, Montana State University (1995-2016)
- Member, M&IE Promotion and Tenure Committee, 2009-2011(excused 2010) and 2017 - 2019
- Chair, Mechanical Engineering Technology Curriculum Review Project, MSU, 2006-2007
- Student Section Advisor, ASME, MET student section, MSU, 1996-2006, 2018- present
- MIE Department Search Committee Member, 2005, 2006, 2015, 2018, 2019

Professional Memberships

- American Society of Mechanical Engineers (ASME)
- American Society of Engineering Education (ASEE)
- Engineering Technology Division (ETD) of ASEE

Selected Professional Development Activities:

- ASEE Annual Conference & Exposition, San Antonio TX, June 10-13, 2012
- ASEE Annual Conference & Exposition, Seattle WA, June 14-17, 2015
- Center for Faculty Excellence Program, DEAL (Developing Excellence in Academic Leadership), MSU's Presidents and Provost's Office, and the Center for Faculty Excellence, Bozeman, MT, United States, (September 17, 2015 - April 21, 2016)
- Center for Faculty Excellence Program, Engineering Education Workshop – Conducting Quality Research in Engineering Education, May 2016
- Boeing Site Visit – Implementation of Additive Manufacturing Techniques in the Manufacture of Airplane Components, Seattle, WA, August 2016
- Getting Started with Technology and Automation – A Gallatin Valley Perspective, Bozeman MT, September 2017
- Securing the Future of American Engineering & Manufacturing: A Workshop on the New, Re-Imagined World of Universities and “Work-and-Learn” Workforce Development Strategies, Washington DC, June 2018
- Manufacturing Growth Workshop, MMEC, Bozeman, MT, February 2017
- ASME Group Leadership Development Conference, Orlando FL, March 2-4, 2018
- ASEE Annual Conference & Exposition, Salt Lake City UT, June 24-27, 2018
- ABET 2019 Program Evaluator Training, Baltimore MD, May 19-21, 2019
- ASME Group Leadership Development Conference, San Antonio TX, March 1-3, 2019
- ASEE Annual Conference & Exposition, Tampa, Florida, June 2020
- ASEE Annual Conference & Exposition, Virtual, July 2021

Awards:

- Outstanding MET Instructor, MSU M&IE Dept., 1992, 1996, 1998, 2000, 2001, 2002, 2003, 2004, 2006.
- Nominated for MSU Presidents Excellence in Teaching Award, 2010
- Awarded the Montana State University College of Engineering Excellence in Service Award, 2010-2011
- Awarded the Montana State University College of Engineering Excellence in Advising Award, 2020-2021
- Awarded the Montana State University Academic Advising Award, 2021