As part of SME’s commitment to continuous improvement and oversight of our industry-driven certification programs, the Certified Manufacturing Technologist (CMfgT) and Certified Manufacturing Engineer (CMfgE) programs are launching an updated Body of Knowledge, Competency Model and Exams.

SME’s professional certifications reflect current practices of the industry. As manufacturing evolves, so do the certification programs that assess the current and future workforce to ensure they meet contemporary requirements. Updating the Body of Knowledge from which certification exams are based requires significant research and input from the manufacturing community. Updates to the CMfgT and CMfgE programs are based upon research supported by, or in part by, the U.S. Office of Naval Research under award number N00014-18-1-2881 led by the National Center for Defense Manufacturing and Machining (NCDMM).

Effective December 1, 2021, the CMfgT and CMfgE exams will be based on the updated Body of Knowledge.

The CMfgT and CMfgE Body of Knowledge has been restructured and expanded. It provides candidates more guidance on the level of competency and importance of key areas to help candidates better prepare for the exam. We’ve highlighted some of the most significant changes below. Download a copy of the updated Body of Knowledge for a comprehensive review.

Manufacturing Foundations is a new section that covers Math, Safety, and Engineering Sciences -- the critical base for all manufacturing technologists and manufacturing engineers.
• **The Manufacturing Process Application** section covers the major manufacturing processes, materials and intellectual property considerations that manufacturing technologists and engineers must understand. Over your career, you may specialize in one or more processes, technologies or materials and their interrelationship. The intent of this section is to ensure you have a broad, solid foundation from which to build upon as you advance.

• **The Design & Development** section has been updated to include expanded coverage for 2D and 3D Modeling, Concurrent Engineering and Design for X (DFX), Engineering Analysis Tasks, and Additive Manufacturing/3D Printing Applications.

• **Digital Enterprise** is a new section focusing on the increasing impact that digital technologies have in manufacturing. It features expanded coverage of topics such as the Industrial Internet of Things (IIoT), data science, digital performance management, artificial and augmented intelligence, machine health/asset optimization, digital twins, and digital threads.

• **Automated Systems & Controls** covers the intersection between information technologies and operational technologies, supply chain planning and management, robotics, and SCADA/HMI.

• **Quality and Continuous Improvement** have been separated into their own sections. Quality is focused on TQM, statistical control methods, and inspection, test and validation. Continuous Improvement is about systems, processes and tools (e.g., lean, Six Sigma, etc.), business results, measurement systems, and quality/cost/delivery metrics.

• **Business Acumen** is an enhanced section focused on soft skills, project management, finance, labor relations, and training and development.

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**FREQUENTLY ASKED QUESTIONS**

**Q: Why was the Body of Knowledge for the CMfgT and CMfgE updated?**

**A:** Professional certifications are an assessment of current practices in a particular field. As the manufacturing industry advances and adopts new technologies and processes, credentialing programs must continue to evolve to ensure they address the current state of the occupation. Periodically, SME conducts industry research to determine if and how certification bodies of knowledge need to be updated. SME undertook such research for the CMfgT and CMfgE programs and is now launching the updated Body of Knowledge, Competency Model and Exams.
Q: How were the changes identified and selected?

A: SME convened an industry-based strategic advisory committee that identified the skills needed for contemporary practice of the manufacturing engineering and manufacturing technologist professions. Their input was integrated into a large validation study that was distributed to industry leaders, manufacturing technologists, manufacturing engineers, educators, and active certification holders to verify the updated certification requirements and body of knowledge. This research shaped the updated body of knowledge and competency models. The exams were updated by industry experts to reflect the requirements of the new Body of Knowledge and approved by the CMfgT & CMfgE Certification Oversight & Appeals Committee, the standing volunteer committee responsible for overseeing the quality of these programs.

Q: When does the new exam go into effect?

A: Effective December 1, 2021, all CMfgT and CMfgE certification applicants will take a new exam based on the updated Body of Knowledge, unless alternate arrangements have been made. Candidates applying for the CMfgT or CMfgE certification on or before November 30, 2021 have the option to test under either the previous or new Body of Knowledge, and will be asked when selecting their test date to specify under which version of the Body of Knowledge they wish to test.

Q: I registered for the exam before December 1, 2021 but I am not scheduled to take it until after December 1, 2021. Which version of the exam will I be taking?

A: If you apply before December 1, 2021, you can select whether to test under the previous or updated Body of Knowledge. When you schedule your exam date, you will be asked to make that selection. For further information, contact us at certification@sme.org or 313.425.3092.

All CMfgT and CMfgE candidates applying on or after December 1, 2021 will test under the updated Body of Knowledge.

For additional questions, please contact SME Certification at certification@sme.org.