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LEARNING INSTITUTE for TECHNOLOGY EDUCATION A Position on MICHIGAN TECHNOLOGY EDUCATION

Foundation/Rationale for Technology Education in Michigan

- 8 ▪ All students should be technologically literate.
- 9 ▪ Technological literacy is the ability to use, manage, understand, and assess
10 technology.
- 11 ▪ Having technological literacy is the capability of understanding – with increasing
12 sophistication – what technology is, how it is created, how it shapes society, and in
13 turn is shaped by society.
- 14 ▪ Technology includes all that is human made. The following technologies are
15 considered to cover the full scope of study in Technology Education:
 - 16 ○ Medical Technologies
 - 17 ○ Agriculture and Related Biotechnologies
 - 18 ○ Power and Energy Technologies
 - 19 ○ Information and Communications Technologies
 - 20 ○ Transportation Technologies
 - 21 ○ Manufacturing Technologies
 - 22 ○ Construction Technologies
- 23 ▪ Technology Education is an interdisciplinary study of technology across grade levels
24 (K-12) that provides opportunities throughout content area studies – Mathematics,
25 English Language Arts, Science, Social Studies – and distinct classes at the middle
26 and high school levels for students to learn about the processes and knowledge related
27 to technology to solve problems and extend human capabilities.
- 28 ▪ Technology Education always uses a laboratory, hands-on, problem solving setting
29 involving technological resources – people, time, materials, tools/equipment,
30 processes, power/energy, capital – to produce products, prototypes, goods, and/or
31 services related to human needs and wants.
- 32 ▪ Technology Education uses a standards-based framework that aligns all aspects of the
33 educational process – planning, teaching/learning, assessment, and professional
34 development – to develop technological literacy.
- 35 ▪ Technology Education in Michigan is based on:

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- 36 ○ *Standards for Technological Literacy: Content for the Study of Technology*
- 37 ○ (ITEA 2000)
- 38 ○ *Advancing Excellence in Technological Literacy: Student Assessment,*
- 39 *Professional Development and Program Standards* (ITEA, 2003)
- 40 ○ *Michigan Curriculum Framework* (MDE, 1996)
- 41 ○ *Michigan Technology Education Curriculum Guide* (MDE, 1998)
- 42 ■ Technology Education serves as a foundation for the following educational
- 43 initiatives:
- 44 ○ Career Awareness
- 45 ○ Career Exploration, especially the hands-on experiences.
- 46 ○ All Michigan Career Pathways
- 47 ○ All national Career Clusters
- 48 ○ State approved Career and Technical Education programs and courses
- 49 ○ Post-secondary education at the apprentice, community college, and university
- 50 levels
- 51 ■ Technology Education provides the content and contexts to directly achieve the
- 52 Michigan standards for teaching, learning, and assessment in the areas of:
- 53 ○ Higher-order thinking
- 54 ○ Deep Knowledge
- 55 ○ Substantive Conversation/Communication
- 56 ○ Connections to the world beyond the classroom.
- 57 ○ Audiences beyond the classroom.
- 58 ■ Technology Education provides the content and contexts to achieve contextual
- 59 learning in the core subjects of Mathematics, English Language Arts, Science, and
- 60 Social Studies.
- 61 ■ Technology Education, as part of the career preparation, provides content and
- 62 contexts associated with “Workplace Readiness” and “Career and Employability
- 63 Skills.”

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65 **Technology Education Activities and Initiatives**

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- 67 ■ Dissemination of the copyright free materials developed through Michigan’s
- 68 participation in the Center to Advance the Teaching of Technology and Science

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69 (CATTS) Consortium. These materials include curriculum development guidelines,
70 courses/units for elementary, middle and high school teaching/learning, and authentic
71 assessment guidelines.

- 72 ■ Liaison with other professional organizations’ efforts to meet Michigan’s vision,
73 mission, and standards for Technology Education. [The vision, mission, and
74 standards are determined by the policies and guidelines of the Michigan’s
75 Department of Education and Office of Career and Technical Preparation.]
- 76 ■ Technical assistance to LEA’s, ISD’s, RESA’s, and CPS Regions in their institution,
77 implementation, and improvement of Technology Education teaching/learning as
78 part of their general education and CTE curriculum and programs.
- 79 ■ Communication, liaison, and collaboration with the MDE and OCTP in matters
80 related to Technology Education curriculum, instruction, school improvement,
81 teacher preparation and certification, and professional development.
- 82 ■ Communication and liaison with and technical assistance to Michigan’s Technology
83 Education teacher preparation institutions in matters related to teacher education and
84 professional development, curricular content and contexts in the areas of technology
85 and pedagogy, and research that produces data, information, practices, and processes
86 for the continuance and improvement of Technology Education teaching and
87 learning.
- 88 ■ Communication and liaison with business, industry, and other groups with interests
89 in the development of technological literacy through Technology Education.

90 **Proposed and Recommended Technology Education Activities and Initiatives**

- 91 ■ Re-establish Michigan’s membership in the CATTS Consortium through direct
92 funding or in collaboration with state Technology Education teacher preparation
93 institutions, professional organizations, and/or business/industry groups. The
94 Consortium provides a cost-effective means to provide contemporary, research-based
95 teaching/learning materials for use in schools, a means to have a voice in the
96 development priorities for future research and development in Technology Education,
97 and professional development resources for in-state workshops and technical
98 assistance.
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- 101 ○ In collaboration with the MDE combine the current Industrial Technology
102 (IX) and Technology and Design (TX) teaching endorsements into one
103 Technology Education (TE) endorsement. This would:
- 104 ▪ a) provide all future technology teachers with an endorsement that
105 meets national standards and includes all aspects of technology and
106 technological literacy,
 - 107 ▪ b) eliminate duplication and overlap of effort encountered in teacher
108 preparation institutions working with constrained resources,
 - 109 ▪ c) eliminate confusion about what can be taught by whom in the
110 development of technological literacy, and
 - 111 ▪ d) provide the MDE teacher certification process with a single
112 standard and set of criteria for endorsing technology teachers.
- 113 ○ Establish a means to gather data on Technology Education students, teachers,
114 and programs to inform the process of maintaining and improving high quality
115 Technology Education in Michigan. There is no primary source of
116 information on Technology Education. Current practice and procedures
117 provides information on CTE indicators, CPS accountabilities, and other
118 information related to Career Initiatives. Some Technology Education
119 information can be extrapolated from available OCTP data but this
120 information is partial at best and sketchy at the least. In addition, without
121 primary source information Michigan is unable to provide an accurate picture
122 of its accomplishments to its students, parents, citizens, and the nation in
123 general.
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