# Michigan High School Graduation Requirements

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**August 2006**

# Why…Economic Survival

- Our students face both national and international competition
- Research shows many students are not prepared to succeed in college or workplace
- Courses like Algebra II are new gateway to higher paying jobs
- Michigan's economic success is tied to a well-educated workforce

# Why…Employers Want

- Strong math and science backgrounds
- Creative problem solvers
- Effective communicators
- Leadership qualities
- Flexibility - ability to adapt
- A minimum of 14 years of education

# College-ready is Work-ready

"…we know that the skills expected for college are also the skills needed to enter today's workforce. So whether students plan further education or work after high school graduation, they need to graduate college-ready."

*On Course for Success*

ACT

# Successful High School Programs

- High expectations
- Rigorous requirements
- Academic studies applied to real-world situations and projects
- Challenging career/technical studies
- Work-based learning opportunities

# Overview of Michigan Merit Curriculum

2011 Requirements (2006 8th grade class)

- 4 English Language Arts
- 4 Mathematics (1 in senior year)
- 3 Science
- 3 Social Studies
- 1 Physical Education/Health (CAHS Full Year of PE)
- 1 Visual, Performing, and Applied Arts
- On-line course/experience

2016 Requirements (2006 3rd grade class)

- 2 credits/experience in Languages other than English

# Carman-Ainsworth High School Graduation Requirements (24 Credits)

- CAHS (State + 8)
- Math: 4 credits (Can take Alg II over 2 years)
- Science: 3 credits  (Physical Science, Bio, Physics OR Chemistry)
- English: 4 credits
- Social Studies: 3 credits (U.S. History, Civics & Econ, World History)
- Physical Education: 1 credit
- Health: ½ credit
- Computer Literacy: ½ credit (meets online learning)
- Elective credits: 8 credits (meet Visual, Applied, and Performing Arts requirements)

# High School Course / Credit
# Content Expectations



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MICHIGAN Department of Education

# Course/Credit Content *Expectations*

- Build on and extend
  - Michigan K-8 Grade Level Content Expectations and the K-8 Educational Experience
  - Michigan Curriculum Framework
  - Career and Employability Skills Standards and Benchmarks

# English Language Arts

- Required: 4 credits
- ***Credit content*** is defined by units
  - 4 model units per credit (year)
  - Anchor texts narrative/informational
  - Organized by Big Ideas
  - Increasing levels of complexity and sophistication
- Emphasis on Reading, Writing, and Informational Text

# ELA Expectations

Organized by **strand** and standard

## Writing, Speaking, and Representing

- Writing Process (8)
- Personal Growth (4)
- Audience and Purpose (9)
- Inquiry and Research (7)
- Finished Products (5)

## Reading, Listening, and Viewing

- Strategy Development (12)
- Meaning Beyond the Literal Level (3)
- Independent Reading (8)

## Literature and Culture

- Close Literary Reading (10)
- Reading and Response (5) (varied genre and time periods)
- Text Analysis (6)
- Mass Media (4)

## Language

- Effective English Language Use (5)
- Language Variety (5)

**4 strands**
**14 standards**
**91 expectations**

# Four Dispositions

***Habits of Mind…***

9th Inter-Relationships and Self-Reliance

10th Critical Response and Stance

11th Transformational Thinking

12th Leadership Qualities

A lens to focus student thinking toward social action and empowerment.

# Mathematics

- Required: 4 Credits
- ***Credit content*** is developed for:
  - Algebra I, Geometry, and Algebra II, Pre-Calculus, Statistics, and Integrated Mathematics
- Algebra I, Geometry, and Algebra II are required
- Senior year of math is required – to be selected from district or online options, and/or dual enrollment
- Sequence is not mandated
- Legislation lists examples, list not exclusive
- Integrated math allowed

# Mathematics Expectations

**Organized by strand, standard, and topic**

## Quantitative Literacy and Logic

- Reasoning About Numbers, Systems, and Quantitative Situations (9)
- Calculation, Algorithms, and Estimation (9)
- Measurement and Precision (5)
- Mathematical Reasoning, Logic, and Proof (10)

## Algebra and Functions

- Expressions, Equations, and Inequalities (16)
- Function (39)
- Mathematical Modeling (3)

## Geometry and Trigonometry

- Figures and Their Properties (29)
- Relations Between Figures (10)
- Transformations of Figures in the Plane (5)

## Statistics and Probability

- Univariate Data – Examining Distributions (9)
- Bivariate Data – Examining Relationships (6)
- Samples, Surveys and Experiments (3)
- Probability Models and Probability Calculation (4)

## Additional Recommended Expectations

- Extensions beyond the core

## Addendum Detailing Outlines for

- PreCalculus
- Statistics and Probability

**4 strands**
**14 standards**
**157 expectations**

# Components of Mathematical Proficiency

- ✓ Conceptual Understanding
  - Comprehension of mathematical concepts, operations, and relations
- ✓ Procedural Fluency
  - Skill in carrying out procedures flexibly and accurately
- ✓ Strategic Competence
  - Ability to formulate, represent, and solve mathematical problems
- ✓ Adaptive Reasoning
  - Capacity for logical thought, reflection, explanation, and justification
- ✓ Productive Disposition
  - Habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence

# Science

- Required: 3 Credits
- ***Credit content*** is developed for:
  - Earth Science, Biology, Chemistry, and Physics
- Biology required of everyone
- Choice of Physics or Chemistry
- 3rd credit to be selected from district or online options, and/or dual enrollment
- Legislation encourages 4th credit
- Sequence not mandated

# Science Expectations

**Organized by strand (discipline), standard, and content statement**

## Earth Science (Covered in Grade 8)

- Inquiry, Reflection, and Social Implications (2)
- Earth Systems (4)
- The Solid Earth (4)
- The Fluid Earth (3)
- Earth in Space and Time (4)

## Biology

- Inquiry, Reflection, and Social Implications (2)
- Organization and Development of Living Systems (6)
- Interdependence of Living Systems and the Environment (5)
- Genetics (4)
- Evolution and Biodiversity (3)

## Physics ("Essentials" in Grade 9)

- Inquiry, Reflection, and Social Implications (2)
- Motion of Objects (3)
- Forces and Motion (8)
- Forms of Energy and Energy Transformations (12)

## Chemistry ("Essentials" in Grade 9)

- Inquiry, Reflection, and Social Implications (2)
- Forms of Energy (5)
- Energy Transfer and Conservation (5)
- Properties of Matter (10)
- Changes in Matter (7)

# Four Practices of Scientific Literacy

- ✓ ***Identifying***
  - Recall, define, relate, represent basic principles
- ✓ ***Using***
  - Make sense of the natural world, predict and explain observations
- ✓ ***Inquiry***
  - Identify and explain patterns, habits of mind
- ✓ ***Reflection***
  - Critique and justify strengths and weaknesses of scientific knowledge

# Social Studies

- Required: 3 credits
- ***Credit content*** is being developed for:
  - U.S. History and Geography, Civics, Economics, and World History and Geography
- 1 credit in U.S. History and Geography
- .5 credit in Civics
- .5 credit in Economics
- 1 credit in World History and Geography
- Anticipated approval and dissemination 2007

# Online Requirement

- Requirement: Law does not require "credit" but instead an "online learning experience" (will be met within our Computer Literacy classes)
- ***Guidelines*** for this learning experience have been developed
  - Credit or non-credit course or learning experience

    OR…
  - District has integrated online learning into each credit area required for graduation
- MDE identifies basic level of technology and internet access for requirement to be in effect

# Languages Other Than English

- Required: (Not until Class of 2016)
  - 2 credits in high school

    OR..

  - Course work or other learning experiences prior to/during high school (K-12)
- American Sign Language (ASL) and Heritage Languages qualify toward this requirement
- Requirement may be met on-line

# What We Know

## Performance Matters

| *Currently* | *What's New* |
| --- | --- |
| • Pass or fail → | • Meet or exceed content expectations |
| • Seat time → | • Perform and demonstrate competency |
| • Individual courses → | • Assign credit based on meeting expectations |

# Courses vs. Credits

Student earns credit by:

- Successfully completing the learning expectations in the Course/Credit Content Expectations for the credit area
- Successful completion to be determined, **in part**, by state or local district assessments
- “Testing out” allowed based on earning qualifying score on state or local assessments

# Courses vs. Credits, cont'd.

- Credit requirement can be met in variety of ways and in other courses
  - Career Technical Education
  - Community based learning
  - Independent study/project work
- High school credit may be earned for high school level courses taken prior to high school

# Courses vs. Credits, cont'd.

- Legislation does not prohibit student satisfying credit requirements through:
  - Dual enrollment
  - Advanced Placement
  - International Baccalaureate
  - Other "early college" experiences or programs

# Personal Curriculum

- Must meet high school requirements except as designated by law
- Graduation requirements may be modified through the “Personal Curriculum”
- It is the parent’s responsibility to initiate a request for a “Personal Curriculum”

# Personal Curriculum

- Developed by team comprised of: the student, parent/guardian, high school counselor or staff member designated by principal
- No age or grade level specified
- Should incorporate as much of graduation requirements as practicable

# Personal Curriculum, cont'd.

- Shall include measurable goals and evaluation
- Aligned with student's Educational Development Plan (EDP from 7th grade)
- Final plan must be approved by parents and district superintendent
- ***Parents*** must communicate with teachers once each quarter to assess progress

# Personal Curriculum

| Credits | Subject Area | Description | Personal Curriculum (Modification) |
|---|---|---|---|
| **4 Credits** | **English Language Arts** | Aligned with subject area content expectations developed by the Department and approved by the State Board of Education | **No modification** |
| **4 Credits** | **Mathematics** | Algebra I<br>Geometry<br>Algebra II<br>1 additional math or math-related credit<br>Math or math-related credit in the final year | **All students must:**<br>•Complete at least 3.5 math or math-related credits<br>•Complete a math or math-related credit in the final year<br>**Algebra 2 modification options:**<br>•Complete 2.5 credits including .5 credit of Algebra II<br>***OR***<br>•Complete a two year Career and Technical education curriculum which includes .5 credit of Algebra II content<br>***OR***<br>•Complete Algebra 2 over 2 years with credit given for each year |

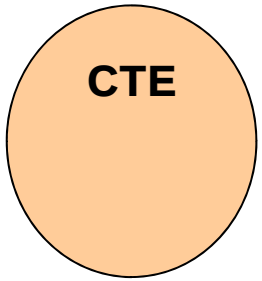
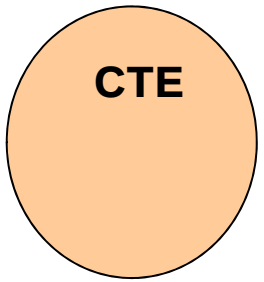
# Personal Curriculum

| Credits | Subject Area | Description | Personal Curriculum (Modification) |
|---|---|---|---|
| **3 Credits** | **Science** | Biology<br>Chemistry or Physics<br>1 additional Science credit | **No modification** |
| **3 Credits** | **Social Studies** | .5 Civics<br>.5 Economics<br>US History and Geography<br>World History and Geography | **No modification of Civics**<br>2 credits must be earned<br>Modified **only if** student takes additional credit(s) beyond the required credits in English Language Arts, Math, Science, or World Languages |
| **1 Credit** | **Health and Physical Education** | Credit guidelines developed by the Michigan Department of Education | Modification **only if** student takes additional credit(s) beyond the required credits in English Language Arts, Math, Science, or World Languages |

# Personal Curriculum

| Credits | Subject Area | Description | Personal Curriculum (Modification) |
|---|---|---|---|
| **1 Credit** | **Visual, Performing, Applied Arts** | Credit guidelines developed by the Michigan Department of Education | Modification **only if** student takes additional credit(s) beyond the required credits in English Language Arts, Math, Science, or World Languages |
| **2 Credits** | **World Languages** | **Begins with the Class of 2016**<br>Credits earned in grades 9-12<br>**OR**<br>An equivalent learning experience in grades K-12 | **No modification** |
| | **Online Learning Experience** | Online course or learning experience<br>**OR**<br>Online experience is incorporated into each of the required credits | **No modification** |

# Sample Student Schedule - Career Technical Education Emphasis

| | Grade 9 | Grade 10 | Grade 11 | Grade 12 |
|---|---|---|---|---|
| Period 1 | English 9 | English 10 | English 11 | English 12 |
| Period 2 | Algebra I | Geometry | Algebra II | Math-Related |
| Period 3 | World History | US History | Gov/Econ | Science |
| Period 4 | Biology | Chemistry |   |   |
| Period 5 | Health/PE | Visual, Performing, and Applied (VPAA) | | |
| Period 6 | LOTE | LOTE | | |

***LOTE: Languages other than English***

# Sample Student Schedule - Instrumental Music Emphasis

| | Grade 9 | Grade 10 | Grade 11 | Grade 12 |
|---|---|---|---|---|
| Period 1 | English 9 | English 10 | English 11 | English 12 |
| Period 2 | Algebra I | Geometry | Algebra II | Math-Related |
| Period 3 | World History | US History | Gov/Econ | Science |
| Period 4 | Biology | Chemistry | LOTE | Elective/Elective |
| Period 5 | Health/PE | LOTE | VPAA | Elective/Elective |
| Period 6 | Band | Band | Band | Band |

# Frequently Asked Questions

- Can be downloaded at: http://www.michigan.gov/highschool