

OVERVIEW

In Michigan, public education is about assuring all students have the knowledge and skills needed to succeed. In today's global workplace, many subjects and skills once thought optional have become essential for all students to enter college or the workplace. These changes have led us to evaluate whether the courses and credits required for high school graduation, adequately prepare Michigan students for success.

Over the past year, the Michigan Department of Education (MDE) has worked to identify and understand challenges students and school districts face, survey current district graduation requirements, tap national and international experts and study best practice or what is working in the area of high school reform across the country. Equipped with this knowledge, on December 13, 2005, the State Board of Education unanimously approved a set of increased state high school graduation requirements for all Michigan students.

The graduation requirements titled the "Michigan Merit Curriculum" include two main components: the Michigan Merit Core, and, the 21st Century Learning Core. The State Board's plan also requires each high school student take the Michigan Merit Exam, or MI-ACCESS alternate assessment, in the spring of his or her junior year.

While the State Board's plan would instill rigor into high school graduation requirements, it also provides some flexibility in the form of district phase-in of the new requirements and student modification provisions in limited circumstances after their junior year. To become law, the Michigan Merit Curriculum must be introduced and passed by the Michigan Legislature and signed by the Governor.

Governor Jennifer M. Granholm has called for the adoption of improved high school graduation requirements for all students, arguing that Michigan's economy will suffer if the state does not have a highly educated workforce. Last year, Governor Granholm appointed The Cherry Commission on Higher Education and Economic Growth, which called for higher academic standards to prepare students for greater success in their post-secondary education, and to meet the Governor's goal of doubling the number of college graduates in Michigan.

The Michigan Merit Curriculum would begin with the freshman class next year, if legislation is passed and enacted by March 1, 2006. If legislation is not enacted by that time, the requirements would begin with the following freshman class. Simultaneously, the Michigan Department of Education is developing High School Content Expectations that will serve as a guide for district curriculum development.

To provide additional information regarding the State Board of Education's action to improve high school graduation requirements in the state, the Michigan Department of Education has developed the following research-based fact sheet **Preparing Michigan Students for Work and College Success.**

SUMMARY

Need to Improve

- Current high school graduation requirements reflect an economy and society that no longer exist¹ and do not represent the real-world demands of work and postsecondary education.²
- The skills and knowledge required in the workplace are no longer very different from those needed for success in college.³
- Business executives have said the exodus of U.S. jobs abroad was not to utilize cheap labor, but to access highly educated and conscientious workforces that were not available in the U.S.⁴
- In a 2005 survey of almost 1,500 recent graduates, just 24% of graduates said they were significantly challenged during high school. 1 in 5 recent high school graduates said that “expectations were low and...it was easy to slide by.”⁵
- National data indicate that academic achievement in high school reading, math and science has been mostly stagnant for decades.⁶

Student Readiness

- Approximately 1 in 5 students are ready to enter college or the workplace. Only 22% of ACT-tested students met or exceeded all three ACT College Readiness Benchmarks—these students likely entered high school with the requisite foundational skills, took rigorous courses, worked hard in those courses, and are now ready to enter college and the workplace.⁷
- Only 32% of students who enter 9th grade and graduate four years later have mastered basic literacy skills and have completed the coursework necessary to succeed in a four-year college.⁸
- Improving college readiness is crucial to the development of a diverse and talented labor force that is able to maintain and increase U.S. economic competitiveness throughout the world.⁹
- Employers report that a majority of high school graduates are inadequately prepared to succeed in an increasingly competitive economy.
 - For example, more than 60% of employers report that recent graduates have poor math skills, while nearly 75% pointed to a deficiency in grammar and writing skills.
 - These high school graduates are likely to become trapped in unskilled, low-paying jobs that do not support a family well above the poverty level, provide benefits or offer a clear pathway for advancement.
- Employers estimate that 39% of recent high school graduates, with no further education, are unprepared for the expectations that they face in entry-level jobs. 45 percent are not adequately prepared for the skills and abilities they need to advance beyond entry level.¹⁰
- In a recent survey, 40 percent of high school graduates said they were not adequately prepared for employment or postsecondary education, and that if they could repeat their high school experience, they would work harder, especially in math, science and English.¹¹

Remedial College Courses

- Nearly 30% of college freshmen are immediately placed into remedial courses that cover material they should have learned in high school.¹²
- Students who require remediation are generally less successful in college and are less likely to earn degrees than their peers who do not require remediation. 76 percent of college students requiring remedial reading, and 63% requiring remedial math, do not earn either an associate’s or a bachelor’s degree.¹³
- Over the course of their college careers, more than 40% of postsecondary students will take at least one remedial course.¹⁴

Courses Matter

- The quality of courses completed in high school is a greater predictor of college success than test scores, class rank, or grade point average.¹⁵
- Students are more likely to pass high-level courses than low-level courses. Thus, the research suggests that increasing access by all students to advanced academic course work will improve student academic achievement.¹⁶
- Those who enter high school with test scores in the lowest quartile learn more in academically rigorous courses than they do in either the low-level vocational or general courses in which they are traditionally enrolled.¹⁷ Moreover, students enrolled in lower-level courses were more likely to earn a “D” or “F” in those courses despite their level of ability.¹⁸
- When minority students are required to take rigorous college preparatory curricula, they rise to the challenge:¹⁹
 - For example, the San Jose Unified School District in California recently showed dramatic results after it required all students to take the A–G curriculum required for admission to the University of California system. Between 1998 and 2002, test scores of African American 11th graders increased nearly seven times as much as those of African American students across the state. What’s more, the more rigorous requirements have not resulted in the increase in dropout rates that some had predicted.²⁰
- Taking a rigorous high school curriculum that includes math, at least through Algebra II, cuts in half the gap in college completion rates between white students and African American and Latino students.²¹

EDUCATION AND EMPLOYMENT

Good Jobs Demand More Education

- According to a wide range of economic, education and business experts, good jobs require more math and English than ever before, and workers will need some postsecondary education or training—whether it is in the form of two- or four-year college course work, apprenticeships, or the military—to meet the needs of the high performance workplace. If U.S. workers cannot meet the demand, many of the highly skilled jobs may go to workers in other countries, such as China and India, which will have a significant impact on U.S. competitiveness in the global economy.²²
- Bureau of Labor Statistics projections show that 80% of the top 50 fastest-growing jobs will require education beyond high school, and that 40% of all new jobs will require at least an associate's degree.²³
- Two-thirds of all new jobs will require some postsecondary education.²⁴

Projected Job Growth 2000-2010²⁵

- Highly Paid Jobs (Earnings \$40K+)
 - 25% share of jobs
 - Projected growth rate: 20%
 - Net new jobs: 7.5 million
 - Total job openings: 14.5 million (51% from job creation)
 - Jobs Include: Managers; Engineers; Legal Professionals; Licensed Medical Professionals, Teachers, Financial, Insurance, and Real Estate Professionals, Technical Knowledge Workers
- Well-Paid Skilled Jobs (Earnings \$25K- 40K)
 - 37% share of jobs
 - Projected growth rate: 12%
 - Net new jobs: 6.6 million
 - Total job openings: 17.9 million (32% from job creation)
 - White-Collar Jobs Include: Financial Services Support, Administrative Support, Health Technicians; Human Services; Sales Managers;
 - Blue-Collar Jobs Include: Protective Services; Crafts Workers; Mechanics, Repairers, and Service Technicians
 - Factory jobs which have now become more skilled have declined from 32 to 17% of all jobs between 1959 and 2000.²⁶
- Low-paid or Low-skilled Jobs (\$25K or less)
 - 38% share of jobs
 - Projected growth rate: 15%
 - Net new jobs: 8.1 million
 - Total job openings: 25.2 million (32% from job creation)
 - Jobs Include: Clerical, Cashiers and Retail Sales Workers; Personal Services; Food Services; Child Care Services; Health and Recreation Services; Laborers; Transportation Operatives; Farming, Forestry, and Fishing

Earning Potential

- High school graduate - \$25,900²⁷
- Non-high school graduate - \$18,900²⁸
- College graduate - \$45,400²⁹
- Master's degree - \$54,500³⁰
- Doctorate degree - \$81,400³¹
- Professional degree (M.D., J.D., etc.) - \$99,300³²
- The average wages of high school graduates, and those individuals who never graduated high school, have fallen over the last two decades; the average incomes of those who went beyond high school have risen.³³

Graduation Requirements Across the Nation

- 42 states require students to take certain courses to graduate from high school.³⁴
- 22 states have standards in all four subjects (English Language Arts, Mathematics, Science and Social Studies).³⁵

GRADUATION REQUIREMENTS

Michigan Graduation Requirements

State Requirements

- Michigan has one state graduation requirement, one semester in Civics.³⁶
- In 12/05, the State Board of Education passed new high school graduation requirements called the Michigan Merit Curriculum. To become law, the requirements need to be passed by both the Michigan Senate and House and signed by the Governor.³⁷

State Board recommendations include:³⁸

- 4 credits of English language arts or integrated Humanities sequence or CTE sequence
- 4 credits of mathematics including: 1 credit each of Algebra I, Geometry, Algebra II, and an additional math or math-related credit in the senior year, or integrated math sequence, or CTE sequence
- 3 credits of science including: 1 credit each of Biology; Physics or Chemistry; and one additional credit of science, or integrated math sequence, or CTE sequence
- 3 credits of social science including .5 credits of civics and economics, and one credit of U.S. History and World History integrated with Geography, or integrated Humanities sequence, or CTE sequence
- 2 credits of world languages
- 1 credit of health/physical education
- 1 credit of visual and performing arts
- The 21st Century Applied Learning Core

Local District Requirements

- Local district graduation requirements differ significantly throughout Michigan. The number of credits required by Michigan districts for graduation range from 18-45 and clustered around 21-29. This reflects the use of block scheduling by some high schools and other credit earning configurations that produce 40-45 credit opportunities.³⁹
- While districts demonstrate a common pattern of required credits in the core subjects, there is not a consensus around a specific curriculum that is expected of all students.⁴⁰
- Beyond English language arts, mathematics, science and social studies there is no consistent pattern of expectations for arts, languages, technology, physical education, health and career preparation.⁴¹

TRENDS FOR SUCCESS BY SUBJECT

English Requirements and Trends for Success

- To be successful in college and well-paying jobs, high school graduates must have strong oral and written communication skills.⁴²
- In English, the vast majority of workers in good jobs had taken “four years of English that is at least at grade level.”⁴³

National Trends

- 32 states and the District of Columbia require all students to take four English courses to graduate with a general diploma. Six other states require three courses.⁴⁴
- Nearly one-third of high school graduates are not ready for college coursework in English Composition.⁴⁵

State of Michigan Graduation Requirements

- Currently, Michigan does not have a single statewide English graduation requirement.

State Board Recommendations

- 4 credits of English language arts or integrated Humanities sequence or CTE sequence.

*Local Michigan District English Requirements*⁴⁶

- 74% required English
- 71% required English 2
- 61% required English 3
- 37% required English 4
- 13% required Writing/Composition

Mathematics Requirements and Trends for Success

- ACT reports that students taking Algebra I, Geometry, Algebra II and one additional higher-level course are more likely to succeed in college.⁴⁷
- High school students who complete advanced math are 12.6 times more likely to earn a four-year degree at an in-state public institution than peers who stop at geometry.⁴⁸
- 68% of students who completed Algebra II felt they were extremely or very well prepared for work.⁴⁹
- College professors and employers agree that to be successful beyond high school, graduates should have mastered the content typically taught in a rigorous four-year course sequence of Algebra I, Geometry and Algebra II, as well as data analysis and statistics.⁵⁰
- Just 40% of high school graduates are ready for their first course in college Algebra.⁵¹

Career Impact

- 84% of individuals who currently hold highly paid professional jobs had taken Algebra II or higher as their last high school math course.⁵²
- Among those who hold well paid, white-collar, skilled jobs, 67% had taken Algebra II or a higher-level math course, and 84% had taken at least Geometry.⁵³

National Trends

- 29 states and the District of Columbia require students to complete three or more years of math.⁵⁴
- 5 states — Alabama, Arkansas, Mississippi, South Carolina and West Virginia — require all students to complete four math courses to graduate.⁵⁵
- 20 states had more than 60% of students taking Algebra II or Integrated Math III by graduation, and eight states had more than 75% of students at this level. Fifty-three percent of Michigan students took these courses.⁵⁶
- In 2002, 41% of graduating high school students nationwide completed four years of challenging high school math.⁵⁷
- In 2002, eight states had more than 50% of high school students taking trigonometry or precalculus by graduation.⁵⁸

Mathematics Requirements and Trends for Success - Continued

State of Michigan Graduation Requirements

- Currently, Michigan does not require a single statewide math graduation requirement.

State Board Recommendations

- 4 credits of mathematics including: 1 credit each of Algebra I, Geometry, Algebra II, and an additional math or math-related credit in the senior year, or integrated math sequence, or CTE sequence.

Local Michigan District Mathematics Requirements⁵⁹

- 5% require 4 credits
 - 47% require 3 or 3.5 credits
 - 48% require 2 or 2.5 credits
 - 32% require Algebra I
 - 23% require Geometry
 - 12% require Algebra II
 - 7% require Pre-Algebra
 - 4% require Trigonometry
 - 3% require Consumer Math
 - 3% require Applied Mathematics
 - 3% require Math I
 - 1% require Statistics
 - .03% require Analytic Geometry
- In 2002, 53% of high school graduates in Michigan took Algebra II, compared to 89% of the students in Missouri.⁶⁰

Science Requirements and Trends for Success

- Students taking courses in Biology, Chemistry, and Physics and upper-level mathematics beyond Algebra II (such as Trigonometry), are likeliest of all students to be college ready.⁶¹
- 26% of ACT-tested high school graduates met ACT's College Readiness Benchmark, demonstrating their readiness for their first credit-bearing college course in Biology.⁶²
- 51% of high school graduates who have not attended college feel that there are gaps in their science preparation for entering the work force.⁶³

National Trends

- In 2002, 59% of students took chemistry by high school graduation, as compared to 45% in 1990, an increase of 14%. In Michigan, over 40% took chemistry.⁶⁴
- In 2002, 25% of students took physics by graduation in 2002.⁶⁵

State of Michigan Graduation Requirements

- Currently, Michigan does not have a single statewide science graduation requirement.

State Board Recommendations

- 3 credits of science including: 1 credit each of Biology; Physics or Chemistry; and one additional credit of science, or integrated math sequence, or CTE sequence.

Local Michigan District Science Requirements⁶⁶

- 42% require 3 or more credits
 - 58% require 2 or 2.5 credits
 - 46% require Biology
 - 35% require Physical Science
 - 18% require Earth/Space Science
 - 10% require Chemistry
 - 9.5% require General Science
 - 9% require Life Science
 - 6% require Physics
 - 5% require Integrated Science
- 42% of Michigan students are taking higher-level science courses by graduation.⁶⁷

Social Studies Requirements and Trends for Success

- Taking more social studies coursework increases students' ACT reading test scores.⁶⁸
- In 1999, students in the United States ranked 10th of 28 countries in knowledge of basic concepts of democracy and government.⁶⁹
- The 28th Annual Phi Delta Kappa/Gallup Poll, conducted in 1996, asked respondents what they considered to be the most important purpose of the nation's schools, apart from providing a basic education. The goal of a school considered "very important" by more people than any other goal was "to prepare students to be responsible citizens." When Phi Delta Kappa/Gallup conducted a follow-up poll of teachers, the results were very similar, 84% of America's teachers said, "to prepare students for responsible citizenship" was "very important," while another 15% called it "quite important."⁷⁰
- Americans between 15 and 26 years of age, born after 1976, are two to three times more likely to say that they are engaged in political activities if they have taken a civics or American government class than those who have not.⁷¹
- In a recent survey of 55 of the nation's elite colleges and universities, 81% of the students surveyed earned a grade of "F" or "D" when asked to answer 32 basic questions drawn from a typical high school history curriculum. For example, only 23% correctly identified James Madison as the "Father of the Constitution," 24% thought the Magna Carta was the charter document signed on the Mayflower.⁷²
- The voting rate among younger voters in presidential elections from 1972 to 2000, declined by a total of 13 points and, across all states, younger voter turnout was on average 28 points lower than the turnout among adults age 25 and older.⁷³

National Trends

- On average, states require three social studies courses, and all but seven states specify at least the equivalent of one full course that students must take.⁷⁴
- 34 states and the District of Columbia require students to study U.S. history, 32 states and the District of Columbia require U.S. government, and seven states and the District of Columbia require state or local history or government.⁷⁵
- 21 states and the District of Columbia require students to study world history or civilizations, and 19 states and the District of Columbia require world geography.⁷⁶
- 19 states require students to study economics, whether economics is included among the social studies course requirements or listed as a separate area of study.⁷⁷

State of Michigan Graduation Requirements

- Michigan has one state graduation requirement, one semester in Civics.⁷⁸

State Board Recommendations

- 3 credits of social science including .5 credits of civics and economics, and one credit of U.S. History and World History integrated with Geography, or integrated Humanities sequence, or CTE sequence.

Local Michigan District Social Studies Requirements⁷⁹

- 13% require 4 credits
- 74% require 3 or 3.5 credits
- 12% require 2 or 2.5 credits
- 78% require American History
- 77% require Government
- 59% require Economics
- 33% require World History
- 29% require Geography
- 26% require Civics (Civics is frequently embedded in various social studies course)
- 19% require additional Social Studies
- 7% require History
- 3% require Psychology
- 2% require Sociology

Visual & Performing Arts Requirements & Trends for Success

- High school students who study the arts earn better grades and scores; are less likely to drop out of school; watch fewer hours of television; are less likely to report boredom in school; have a more positive self-concept; and are more involved in community service.⁸⁰
- Research shows that education in the arts has the capacity to provide additional pathways or avenues for student achievement. Subsequent studies show that many students who have difficulty learning through traditional methods can benefit from teaching strategies that include other means of learning and subject areas, such as the arts.⁸¹
- US Department of Labor recognized the role of arts education as key to skill development in: creative thinking, decision making, problem solving, and modeling in its Secretary's Commission on Achieving Necessary Skills (SCANS) Report 2000.⁸²

National Trends

- 37 states currently have high school graduation requirements in statute or code that include the arts. These requirements range from .5 to 2 credits in the fine and performing arts.⁸³
- Music and visual arts instruction were offered in over 90% of the nation's public secondary schools in 1999-2000. Over 70% of the nation's secondary school administrators indicated that individuals at the school, and parents, considered the arts an essential part of a high quality education.⁸⁴

State of Michigan Graduation Requirements

- Currently, Michigan does not have a single statewide Visual & Performing Arts graduation requirement.

State Board Recommendations

- 1 credit of visual and performing arts.

Local Michigan District Art Requirements⁸⁵

- 6% require 2.5 or more credits
- 18% require 2 credits
- 23% require 1 credit
- 6% require .5 credits

World Languages Requirements and Trends for Success

- Students who study two years of a language other than English score an average of 60 points higher on the SAT I verbal test and 48 points higher on the math than students who do not complete two years of a language.⁸⁶
- For students who go on to study four years of a language in high school, the average gains are 149 and 150 points on the verbal and math tests, respectively.⁸⁷
- Foreign language completion in high school also is linked to higher wages in the workplace. Studying a language other than English for two years raises a graduate's wages by an average of 4%.⁸⁸
- A survey of 400 faculty and staff members from 20 research universities concluded that learning a language other than English improves performance in English as well, because it introduces students to a theoretical view of language that aids the study of English.⁸⁹

National Trends

- District of Columbia and Texas require two years, and New Jersey and New York require one year of a foreign language.⁹⁰

State of Michigan Graduation Requirements

- Currently, Michigan does not have a single statewide world language graduation requirement.

State Board Recommendations

- 2 credits of world languages.

Local District World Language Requirements⁶

- 85% require 0 credits
- 2% require .5 credits
- 7% require 1 credit
- 6% require 2 credits
- .04% require 3 credits

Technology Requirements and Trends for Success

- 38 million fulltime workers in the nation have Internet access at their jobs and two-thirds of them (67%) go online at least once per day. 72% of full-time workers with Internet access at work say it has improved their ability to do their jobs.⁹¹
- In 2003, 97% of high school students used computers and 80% used the internet.⁹²

National Trend

- During the 2002–03 twelve-month school year, about one-third of public school districts (36 percent) had students in the district enrolled in online distance education courses.⁹³
- In 2002-2003, the percent of districts with students enrolled in online distance education courses ranged from 59-80%.⁹⁴

State of Michigan Graduation Requirements

- Currently, Michigan does not have a single statewide Technology graduation requirement.

State Board Recommendations

- The 21st Century Applied Learning Core.

Local District Technology Requirements⁹⁵

- 10% require 0 credits
- 31% require .5 credit
- 32% require 1 credit
- 5% require 1.5 credits or more

Health/Physical Education Requirements & Trends for Success

- 73% of adults from a nationally representative sample felt that health education should be a top priority for high school graduation.⁹⁶
- Effective health education helps students stay in school and do better in their classes.
 - Several research studies confirm a strong relationship between student involvement in risk behaviors and negative school outcomes such as graduation rates, grades, performance on standardized tests, attendance, dropout rates, and homework completion.⁹⁷
 - Students who participate in health education classes that use effective curricula show decreases in these risk behaviors.⁹⁸
- A meta-analysis of nearly 200 studies of the effectiveness of exercise on cognitive functioning found that regular physical activity supports better learning.⁹⁹

National Trends

- 35 states currently have high school graduation requirements in statute or code that include health education. These requirements range from .5 to 1.5 credits for health education alone; and 1 to 2 credits when combined with physical education.¹⁰⁰
- 40 states currently have requirements for high school physical education. Nine states have a requirement of two semesters of physical education. Two states have one credit and one state has a 1.5 credit requirement. Some states list requirements in minutes and they vary from 100 minutes in each of the 9-12 grades to 270 minutes over the entire high school career.
- During the past 20 years there has been a dramatic increase in obesity in the United States. Today, seven states have obesity prevalence rates of 15–19%; 33 states had rates of 20–24%; and nine states, including Michigan, had rates of more than 25%.¹⁰¹

State of Michigan Graduation Requirements

- Currently, Michigan does not have a single statewide Health/Physical Education graduation requirement.

State Board Recommendations

- 1 credit of health/physical education

Local Michigan District Health and Physical Education Requirements

- 82% of Michigan School Districts require either .5 or 1 Health credit.¹⁰²
- 79% of Michigan high schools already require a health education course. Fourteen percent require more than one health education course; 26% require more than 1 physical education course.¹⁰³
- According to the Michigan School Health Profile, 83% of middle schools and 100% of high schools in Michigan require physical education.¹⁰⁴

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