



STATE OF MICHIGAN
DEPARTMENT OF EDUCATION
LANSING



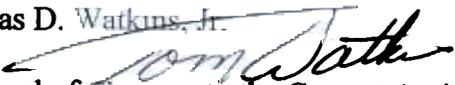
THOMAS D. WATKINS, JR.
SUPERINTENDENT OF
PUBLIC INSTRUCTION

JENNIFER M. GRANHOLM
GOVERNOR

August 30, 2004

MEMORANDUM

TO: State Board of Education

FROM: Thomas D. Watkins, Jr. 

SUBJECT: Approval of Changes to the Current Agricultural Education (HX) Endorsement

In pursuit of its goal to improve teacher quality, the State Board of Education receives proposals for the adoption and revision of program standards for teacher preparation. When applicable, the proposed standards are developed to reflect and support Michigan's K-12 Curriculum Framework and Benchmarks, as well as standards adopted by national professional/specialty area organizations.

During 2003-2004, a referent group reflecting the interests of higher education faculty and K-12 teachers worked on the development of standards for the preparation of agricultural teachers. The standards align with the K-12 content standards in the *Michigan Curriculum Framework*, the *Michigan Career Pathways*, and with standards developed by the American Association of Agricultural Educators.

A draft was forwarded to selected groups/organizations, all Michigan teacher preparation institutions, and to all intermediate and local school districts that offer classes related to agriscience and natural resources for review and comment in April 2004. As presented in Attachment 1, the standards reflect the feedback received. Attachment 2 provides additional information regarding the standards development and review process.

An additional recommendation from the referent committee was to change the name of the current Agricultural Education (HX) endorsement to Agriscience and Natural Resources. This change provides consistency with the current name of the Vocational Agriscience and Natural Resources (VA) endorsement.

Secondary teachers who have earned the HX endorsement may also qualify for the VA endorsement if they have also completed 6 semester hours in vocational education (covering vocational curriculum development, academic integration, and management of vocational programs, safety/ethical issues, and instruction in work-based learning) and 4,000 hours of applicable work experience. Completion of an HX program is a prerequisite for the

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VA endorsement. Holders of HX endorsements may teach classes in agricultural education, natural resources, animal science, plant science, agriscience/natural resources technology, agriscience/natural resources management, agriscience/natural resources leadership and development, and environmental management.

The HX endorsement requires completion of a group major of at least 36 semester hours or a group minor of at least 24 semester hours. Previously certified teachers may also complete an additional endorsement program of at least 24 semester hours. HX programs will be approved for institutions that demonstrate how the standards and requirements will be met for all candidates in their proposed programs.

The new Agriscience and Natural Resources (HX) standards were reviewed by the Board-appointed Professional Standards Commission for Teachers and are recommended for adoption by the State Board of Education.

It is recommended that the State Board of Education approve the name change for the Agricultural Education (HX) endorsement to Agriscience and Natural Resources and the standards for the preparation of agriscience and natural resources teachers, as discussed in the Superintendent's memorandum dated August 30, 2004.

Proposal to the
Michigan State Board of Education
for the Preparation of Teachers

Agriscience and Natural Resources (HX)

Submitted by the
Office of Professional Preparation Services

August 30, 2004

Standards for the Preparation of Teachers

Agriscience and Natural Resources (HX)



Adopted by the Michigan State Board of Education
<date>

Standards for the Preparation of Teachers of Agriscience and Natural Resources (HX)

Preface

Development of the Proposal

In 2003-2004, a referent group of professional educators developed a proposal to adopt standards for the preparation of Agricultural Education teachers. These standards align with standards developed by the *Michigan Curriculum Framework*, the *Michigan Career Pathways*, and the standards developed by the American Association of Agricultural Educators. The referent committee also recommended a change in the name of the current Agricultural Education (HX) endorsement to Agriscience and Natural Resources. This change provides consistency with the current name of the Vocational Agriscience and Natural Resources (VA) endorsement. Agriscience and natural resources teachers are prepared to teach classes in agricultural education, natural resources, animal science, plant science, agriscience/natural resources technology, agriscience/natural resources management, agriscience/natural resources leadership and development, and environmental management.

Secondary teachers who have earned the HX endorsement may also qualify for a VA endorsement if they have also completed 6 semester hours in vocational education (covering vocational curriculum development, academic integration, management of vocational programs, safety/ethical issues, and instruction in work-based learning) and 4,000 hours of applicable work experience. Completion of an HX program is a prerequisite for the VA endorsement.

To provide information and gather feedback on the proposal, in April 2004 a copy was forwarded for review and comment to selected organizations, all Michigan teacher preparation institutions, and all intermediate and local school districts that offer classes related to Agriscience and Natural Resources. As presented in this document, the standards reflect the feedback received.

State Board adoption of new specialty program standards typically leads to the creation of a new certification test for teachers prepared to teach in the content area. Test development for a new Michigan Test for Teacher Certification in Agriscience and Natural Resources will be scheduled according to the recommendation of the Standing Technical Advisory Council.

Approval of Programs

Teacher preparation institutions that have previously been approved to offer HX programs are required to submit an application for program approval to demonstrate how the standards and requirements will be met for all candidates in their proposed programs. Following initial approval, the teacher preparation programs will be reviewed every seven years through the Periodic Review/Program Evaluation process.

The HX endorsement requires completion of a group major of at least 36 semester hours or a group minor of at least 24 semester hours. Previously certified teachers may also complete an additional endorsement program of at least 24 semester hours.

Michigan Agricultural Education Teacher Preparation Standards and Proficiencies Content Guidelines/Standards Matrix

College/University _____ Code HX

Source of Guidelines/Standards Michigan State Board of Education Program/Subject Area Agriscience and Natural Resources

Proficiency Level

Upon completion of an approved teacher preparation program in Michigan for Agricultural Education, a person recommended for the Michigan Provisional certificate must meet the following proficiency level for each standard.

The Description of Proficiency levels are:

- A = Awareness:** Possesses general knowledge of (exposure)
- B = Basic:** Ability to comprehend and apply (use)
- C = Comprehensive:** High level of understanding, application, and reflecting (proficient)

DIRECTIONS: List required courses on matrix and provide additional narrative to explain how standards are met. If electives are included, they should be clearly indicated. Adjust size of cells as needed.

No	Standards	Level of Proficiency	Narrative Explaining How Required Courses and/or Experiences Fulfill the Standards	
			Group Major	Group Minor
1.0	Program Development Content Knowledge: The program will teach candidates about the components of an Agriscience and Natural Resources program consistent with best practices and current research findings. <i>The preparation of agriscience and natural resources teachers will enable them to:</i>			

No	Standards	Level of Proficiency	Narrative Explaining How Required Courses and/or Experiences Fulfill the Standards	
			Group Major	Group Minor
1.1	identify the objectives of agriscience and natural resources education at the secondary school level;	C		
1.2	describe the concepts of a total program in agriscience and natural resources education;	C		
1.3	describe the various types and settings of programs and curricula in agriscience and natural resources education;	C		
1.4	identify the role of professional educators, in general, and the duties and responsibilities of a teacher in agriscience and natural resources;	C		
1.5	assess personal strengths and weaknesses based upon the qualifications of effective teachers of agriscience and natural resources;	C		
1.6	list the requirements for career and technical teacher certification in Michigan;	C		
1.7	plan an undergraduate program in agriscience and natural resources education to achieve individual educational goals;	B		
1.8	identify the opportunities and rewards existing in teaching agriscience and natural resources;	C		
1.9	identify the trends and developments taking place in agriscience and natural resources education;	B		
1.10	develop a total curriculum for an agriscience and natural resources education program at the secondary school level;	C		
1.11	identify the need for agriscience and natural resources education in Michigan and the nation; and	C		

No	Standards	Level of Proficiency	Narrative Explaining How Required Courses and/or Experiences Fulfill the Standards	
			Group Major	Group Minor
1.12	identify guidelines for developing new agriscience and natural resources education programs.	C		
2.0	<p>Technical Content Knowledge: The program will teach candidates the most recent and relevant technical content knowledge related to Agriscience and Natural Resources. <i>The preparation of agriscience and natural resources teachers will enable them to:</i></p>			
2.1	describe, identify, and demonstrate the key concepts and best management practices related to technical agriscience and natural resources;	B		
2.2	integrate natural resources into a planned and organized curriculum;	B		
2.3	integrate plant science into a planned and organized curriculum;	B		
2.4	integrate animal science into a planned and organized curriculum;	B		
2.5	integrate business management into a planned and organized curriculum;	B		
2.6	integrate leadership, personal development and communications into a planned and organized curriculum;	B		
2.7	integrate agricultural mechanics into a planned and organized curriculum;	B		
2.8	integrate soil science into a planned and organized curriculum;	B		
2.9	integrate floriculture into a planned and organized curriculum;	B		

No	Standards	Level of Proficiency	Narrative Explaining How Required Courses and/or Experiences Fulfill the Standards	
			Group Major	Group Minor
2.10	integrate landscape into a planned and organized curriculum;	B		
2.11	integrate environmental science into a planned and organized curriculum; and	B		
2.12	teach general laboratory safety.	B		
3.0	Instructional Material Development Content Knowledge: The program will teach candidates how to design, present, and assess Agriscience and Natural Resources instructional materials. (Programs should provide evidence in field experiences or content area methods classes that candidates have developed instructional skills specifically related to Agriscience and Natural Resources.) <i>The preparation of agriscience and natural resources teachers will enable them to:</i>			
3.1	use group dynamic techniques for instruction of students;	B		
3.2	analyze subject matter in developing units of instruction;	B		
3.3	formulate observable and measurable educational objectives for an instructional unit;	C		
3.4	use reference and resource materials in instruction;	B		
3.5	prepare and use teaching materials;	B		
3.6	prepare materials, equipment and the environment for teaching;	B		

No	Standards	Level of Proficiency	Narrative Explaining How Required Courses and/or Experiences Fulfill the Standards	
			Group Major	Group Minor
3.7	prepare instructional materials for use in individual skill development;	B		
3.8	use various methods to involve students in the teaching and learning process;	B		
3.9	apply basic principles of learning to teaching agriscience and natural resources;	B		
3.10	recognize discipline problems and implement corrective measures;	B		
3.11	utilize student management and organizational techniques;	B		
3.12	determine when and how to use the various methods of teaching;	B		
3.13	utilize student needs and experience in developing instructional materials;	B		
3.14	develop and deliver the introduction to a lesson;	B		
3.15	prepare and use lesson plans;	B		
3.16	evaluate and summarize the effectiveness and develop the appropriate conclusions of lesson plans;	B		
3.17	evaluate the effectiveness of teaching;	B		
3.18	construct evaluation instruments to assess student achievement;	B		
3.19	arrive at an objective evaluation of student attainment of competencies;	B		
3.20	maintain an environment conducive to effective learning;	B		
3.21	use supervised study techniques;	B		

No	Standards	Level of Proficiency	Narrative Explaining How Required Courses and/or Experiences Fulfill the Standards	
			Group Major	Group Minor
3.22	organize and use student notebooks; and	B		
3.23	plan, organize, conduct, and evaluate field trips.	B		
4.0	<p>Program Management Content Knowledge: The program will teach candidates how to develop, manage, and evaluate an Agriscience and Natural Resources program in schools consistent with best practice and current research findings.</p> <p><i>The preparation of agriscience and natural resources teachers will enable them to:</i></p>			
4.1	plan, organize, and maintain physical facilities;	B		
4.2	develop an adequate department budget based upon the instructional program with provisions for tools, consumable supplies, and equipment;	B		
4.3	develop laboratory, land lab, horticulture and animal facility experience record keeping systems for each class;	B		
4.4	maintain an inventory of tools, equipment, and supplies;	B		
4.5	plan a comprehensive extended program of activities;	B		
4.6	Cooperate with guidance counselors in providing guidance and counseling for students;	B		
4.7	organize and use a program advisory committee;	B		
4.8	organize and use an FFA alumni; and	B		

No	Standards	Level of Proficiency	Narrative Explaining How Required Courses and/or Experiences Fulfill the Standards	
			Group Major	Group Minor
4.9	understand State department requirements.	B		
5.0	<p>Leadership Development Content Knowledge: The program will teach candidates the most recent and relevant youth leadership content knowledge related to Agriscience and Natural Resources. <i>The preparation of agriscience and natural resources teachers will enable them to:</i></p>			
5.1	describe the role of FFA in motivating students and vitalizing instruction in agriscience and natural resources education;	C		
5.2	list the characteristics of basic leadership behavior patterns;	C		
5.3	identify the characteristics of a quality FFA chapter based on State standards;	C		
5.4	design and carry out a meaningful FFA program of activities;	C		
5.5	design an effective FFA chapter officer training program;	C		
5.6	list the duties of the advisor, including the management, organization, and development of an effective FFA chapter;	C		
5.7	use basic parliamentary procedure skills; and	C		
5.8	explain the purpose of an FFA constitution and by-laws.	C		

No	Standards	Level of Proficiency	Narrative Explaining How Required Courses and/or Experiences Fulfill the Standards	
			Group Major	Group Minor
6.0	Supervised Agricultural Experience Content Knowledge: The program will teach candidates the most recent and relevant supervised agricultural experience content knowledge related to Agriscience and Natural Resources. <i>The preparation of agriscience and natural resources teachers will enable them to:</i>			
6.1	identify the components of an effective work based/experiential learning (Supervised Agricultural Experience - SAE) program;	C		
6.2	develop a long-range work based/experiential learning (SAE) program with students;	B		
6.3	plan a comprehensive plan of student supervision;	B		
6.4	carry out an effective program of student supervision; and	B		
6.5	develop project budgets, training plans, and agreements related to the work based/experiential learning (SAE) program.	B		
7.0	Career Education Content Knowledge: The program will teach candidates the most recent and relevant career education content knowledge related to Agriscience and Natural Resources. <i>The preparation of agriscience and natural resources teachers will enable them to:</i>			
7.1	describe the role of career technical education to the world of work;	B		
7.2	identify the basic principles of career and technical education;	B		

No	Standards	Level of Proficiency	Narrative Explaining How Required Courses and/or Experiences Fulfill the Standards	
			Group Major	Group Minor
7.2	identify the basic principles of career and technical education;	B		
7.3	differentiate between general, career, and technical education;	B		
7.4	describe the most recent educational trends in general education, career, and technical education; and	B		
7.5	describe the characteristics and organizational patterns of each career and technical education program.	B		

**Teacher Preparation Standards Development Committee
Agriscience and Natural Resources (HX)**

Committee Member

Organization Institution

Aaron Saari

Maple Valley High School

Megan Burgess

Springport High School

Leigh Osentowski

Capac High School

Jeff Hawes

Michigan FFA

Dave Krueger

Michigan State University

Charlie Arensmeier

Michigan Association of Agriscience Educators

**Michigan Department of Labor and Economic Growth
Office of Career and Technical Preparation**

Randy Showerman

Glenna Zollinger-Russell

**Michigan Department of Education
Office of Professional Preparation Services**

Sue Wittick

**Distribution of Draft Standards
Agriscience and Natural Resources (HX)**

Educational/Professional Organizations

- Association of Independent Colleges and Universities of Michigan
- Coalition of Michigan Subject Matter Education Organizations
- Directors and Representatives of Teacher Education Programs
- Michigan Association of Nonpublic Schools
- Michigan Association of School Administrators
- Michigan Association of School Boards
- Michigan Association of School Personnel Administrators
- Michigan Association of Secondary School Principals
- Michigan Association of Supervision and Curriculum Development
- Michigan Association of Teacher Educators
- Michigan Congress of Parents, Teachers, and Students
- Michigan Education Association
- Michigan Elementary and Middle School Principals Association
- Michigan Federation of Teachers and School Related Personnel
- Middle Cities Education Association
- * Professional Standards Commission for Teachers

* Indicates submission of a response

**Teacher Preparation Institutions
Agriscience and Natural Resources (HX)**

Adrian College	* Madonna University
Albion College	Marygrove College
Alma College	* Michigan State University
* Andrews University	Michigan Technological University
Aquinas College	Northern Michigan University
Calvin College	Oakland University
Central Michigan University	Olivet College
Concordia University	Saginaw Valley State University
Cornerstone University	Siena Heights University
Eastern Michigan University	Spring Arbor University
Ferris State University	University of Michigan – Dearborn
Grand Valley State University	University of Michigan – Flint
Hillsdale College	University of Detroit Mercy
Hope College	University of Michigan
Kalamazoo College	Wayne State University
Lake Superior State University	Western Michigan University

Teacher Candidates

Eight teacher candidates that were Michigan State University interns (student teachers) in Agriscience and Natural Resources classrooms during 2003-2004

* Indicates submission of a response

**Intermediate and Local School Districts
Agriscience and Natural Resources (HX)**

- Akron-Fairgrove Schools
- Alanson-Littlefield
- Alcona Community Schools
- * Alma Public Schools
- Alpena Public Schools
- Anchor Bay School District
- Allegan Area Technical & Education Center
- Bay Arenac Career Center
- Beal City Public Schools
- Belding Area Schools
- Benzie County Central Schools
- Blissfield Community Schools
- Bloomfield Hills Public Schools
- Boyne City Public Schools
- Branch Area Career Center
- Breckenridge Community Schools
- Bronson Community Schools
- * Byron Area Schools
- Caledonia Community Schools
- Camden-Frontier Schools
- Capac Community Schools
- Careerline Technical Center
- Cassopolis Public Schools
- Cedar Springs Public Schools
- Central Montcalm Public Schools
- Centreville Public Schools
- Charlotte Public Schools
- Chesaning Union Schools
- Chippewa Hills School District
- Coopersville Area Public Schools
- Corunna Public Schools
- Countryside Charter Schools
- Dansville Schools
- Detroit Public Schools
- Dowagiac Union Schools

* Indicates submission of a response

Dundee Community Schools
 Durand Area Schools
 Fremont Public Schools
 Galien Township School District
 Gaylord Community Schools
 * Genesee Area Skills Center
 Gladwin Community Schools
 * Golightly Career Center
 Grant Public Schools
 Greenville Public Schools
 Harbor Beach Community Schools
 Hastings School District
 Heartlands Institute of Technology
 Hill Center for Academics and Technology
 Homer Community Schools
 Homer Public Schools
 Huron Area Technical Center
 Ithaca Public Schools
 Jackson Area Career Center
 Jonesville Community Schools
 Kent Career Technical Center
 Kinde-North Huron Schools
 Laingsburg Community Schools
 Lakewood Public Schools
 Lenawee Vocational Technical Center
 Lincoln Park Public Schools
 * Lowell Area Schools
 Manchester Community Schools
 Marshall Public Schools
 Mason Public Schools
 Milan Area Schools
 Montague Area Public Schools
 Montcalm Area Career Center
 New Lothrop Area Public Schools
 North Adams-Jerome Public Schools
 Oakland Technical Center, Northwest
 Oakland Technical Center, Southeast
 Oakland Technical Center, Southwest

Indicates submission of a response

- Ogemaw Heights High School
- * Olivet Community Schools
- Ovid-Elsie Area Schools
- Pankow Vocational Technical Center
- Perry Public Schools
- Petoskey Public Schools
- Pewamo-Westphalia Community Schools
- Pigeon-Laker Schools
- Port Hope Community Schools
- Randolph Vocational Technical Center
- Ravenna Public Schools
- River Valley School District
- Roosevelt High School
- Saginaw Career Complex
- Saline-South & West Washtenaw Center
- Sand Creek Community Schools
- Sanilac Career Center
- Saranac Community Schools
- Sault Sainte Marie Area Schools
- * Springport Public Schools
- St. Louis Public Schools
- Standish-Sterling Community Schools
- Stephenson Area Schools
- Traverse Bay Area Career-Technical Center
- Tuscola Technology Center
- Uby Community Schools
- Unionville-Sebewaing Area Schools
- Van Buren Technology Center
- Vermontville-Maple Valley
- Vicksburg Community Schools
- Waldron Area Schools
- Warren Career Preparation
- Warren Mott High School
- Wayne Regional Educational Service Agency
- Webberville Community Schools
- Wexford-Missaukee Area Career Technical Center
- Whittemore-Prescott Area Schools
- Wittenbach Agricultural Environment Center

* Indicates submission of a response

Note: Additional responses were received anonymously