

UW System Engineering Program Array

1



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Presentation at the Education
Committee of the UW System
Board of Regents

December 4, 2014

Notices of Intent for New Engineering Programs

2

Institution	Program	Date
UW-Eau Claire	B.S. in Materials Science and Engineering	September 13, 2013
UW-River Falls	B.S. in Environmental Engineering & B.S. in Agricultural Engineering	October 15, 2013
UW-Stevens Point	B.S. in Chemical Engineering & B. S. in Environmental Engineering	December 12, 2013
UW-Stout	B.S. in Chemical Engineering, B.S. in Electrical Engineering, & B.S. in Mechanical Engineering	December 20, 2013
UW-Milwaukee	B.S. in Biomedical Engineering	Pre-authorization March 27, 2013

Previous UW System Engineering Studies

3

1974 Report of the System
Task Force on
Engineering/Technology

1988 Better Living
Through Technology
Report

2001 Market Analysis for
Engineering Professionals in
Wisconsin, Minnesota, and
Illinois

2007 Engineering
Education Task Force
Report

Key Issues in Array Management

4

State Demand for Engineers

- In which Engineering Disciplines?
- Is there Geographic Demand for Engineering Talent?

Is there a Pipeline of Qualified Students?

Key Issues Continued

5

If Expansion is
the Solution,

What is Most
Cost-Efficient?

Does it Increase
the Engineering
Talent Base in
Wisconsin?

NCHEMS Study: Data Provided

6

Data on Supply and Demand (Current and Future Market Need) for Engineers:

- In Various Specialty Areas
- In the State
- In Different Regions within the State

NCHEMS Recommendations

7

- The Report identifies Five Engineering Fields in which there is a Need in the State of Wisconsin:
 - Chemical
 - Civil
 - Electrical
 - Industrial
 - Mechanical

NCHEMS Findings Include

8

- Wisconsin is a Net Exporter of Engineers
- Retirements are not Expected to Create Acute Shortages of Engineers
- Engineering Wages in Wisconsin are Lower than in Bordering States and Nationally

NCHEMS Recommendations on Regional Demand for New Engineering Programs

9

1. No New Engineering Programs should be Created in:

Region 1 (Western WI/Minneapolis)

Region 2 (Northern WI)

Region 3 (Wausau)

Region 4 (Western WI from North of Platteville to North of La Crosse)

NCHEMS Recommendations on Regional Demand for New Engineering Programs

10

2. Expand Existing Capacity at:

- UW-Madison (Region 6)
- UW-Milwaukee (Region 7)

NCHEMS Recommendations on Regional Demand for New Engineering Programs

11

3. Conduct a Targeted Study to Determine:

- If a Chemical Engineering Program should be added to UW-Milwaukee, or
- Whether Priority should be given to Expanding Capacity for Civil, Electrical, Industrial, and Mechanical Programs

NCHEMS Recommendations on Regional Demand for New Engineering Programs

12

4. Create a Collaborative Engineering Program in Region 5

(At UW-Green Bay and/or UW-Oshkosh, with the Involvement of UW-Madison and/or UW-Milwaukee)

UW Institution Responses

13

Of the Nine UW Institutions that Responded:

Five Institutions were Overall Accepting of the Report's Recommendations and Made Additional Observations

Four Institutions were Critical of the Report's Recommendations and Presented Alternative Data and Recommendations

Institutional Support for the NCHEMS Study

14

**Additional Employer/State Demand
Could Be Satisfied Through:**

Articulation Agreements and Satellite Programs

Cooperative and Collaborative Programs

Levering Existing Capacity

Expanding Enrollments at Existing Locations at
a Lower Cost to the UW System

Institutional Criticism of the NCHEMS Study

15

Shortcomings in Data Analysis:

Flawed Method to Assess Engineering Degree Supply and Demand in Specific Regions

Faculty Expertise/Resources May Already Exist at Campuses Proposing Engineering Degrees

Limited Analysis of Future Demand in Favor of a Present Snapshot Analysis

No Study of the Problem “On the Ground”

Consortial Proposal

16

Northwest Wisconsin Engineering Consortium

UW-Stout
UW-River Falls
UW-Eau Claire

Proposed Programs

UW-River Falls

Agricultural Engineering
Environmental Engineering

UW-Stout

Chemical Engineering
Mechanical Engineering
Electrical Engineering

UW-Eau Claire

Materials Science and Engineering

Decision Options

17

1. No New Programs will be Authorized.
2. Build on the Existing Program Array at Institutions Currently Operating Successful Engineering Programs; or
3. Grant Additional Engineering Program Authorizations for:
 - Stand-Alone Programs
 - Consortial Programs
 - Partnerships with Existing Programs
 - Stepwise Growth

Points of View

18



Chancellor Meyer
UW-Stout



Chancellor Shields
UW-Platteville



Chancellor Patterson
UW-Stevens Point

Regent Discussion

19

RECOMMENDATIONS