The Next Generation of Online Education

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Dr. Henry Wiebe, Vice Provost, Global Learning
Global Learning’s mission is to bring Missouri S&T’s educational capabilities to a global market.

Global Learning contains the offices of:

- Distance and Continuing Education (DCE)
- Engineering Education Center in St. Louis (EEC)
- Video Communications Center (VCC)

“The highlight was how personal the overall experience was. I would definitely recommend distance education from Missouri S&T. The flexibility in the plan of study, the wide range of courses offered via distance, and the technology used for content delivery makes Missouri S&T an obvious choice.”

Jason Dauby
PhD SYSE’11
Growth in Distance Education

Most credit courses are broadcast live and permit interaction between instructor & student.

Courses are archived to allow working professionals some flexibility in fitting education into a busy work schedule.

Personalized services are available to help students find expedited solutions to issues they face.

Instructional design help is offered to faculty teaching online credit or non-credit courses.

Enrollment Growth

Off-campus enrollment growth during the past 10 years has increased from 392 students in 2002 to 863 in 2011.

<table>
<thead>
<tr>
<th>Year</th>
<th>Enrollment Total</th>
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<tbody>
<tr>
<td>2002</td>
<td>400</td>
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<tr>
<td>2003</td>
<td>450</td>
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<td>2004</td>
<td>500</td>
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<td>2005</td>
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<td>2008</td>
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<td>2009</td>
<td>750</td>
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<tr>
<td>2010</td>
<td>800</td>
</tr>
<tr>
<td>2011</td>
<td>863</td>
</tr>
</tbody>
</table>

(Includes students from programs such as FLW, MSU and Sri Lanka)
Facilities include 8 fully-equipped classrooms (7 HD video-capable) and 3 classrooms at the EEC

Over 100 classes per semester; 300 hours of live production per week

Evaluate new software and hardware to ensure the best quality of course delivery

Additional services include non-credit course production, video teleconferencing and campus event broadcasting

**Growth in Distance Courses**

Delivery of distance courses has grown steadily — increasing from almost 100 courses in 2002 to more than 300 courses in 2011. Student credit hours have seen a corresponding jump from 1600 credit hours to just over 5000 credit hours/year.
The EEC — A Valuable Resource

EEC’s mission is to supplement the Rolla campus in providing educational services to working professionals in the greater St. Louis area, Rolla and throughout the world.

Valuable Resource

The EEC provides a valuable resource for the S&T campus. In the last five years, the number of student credit hours taught has increased from 2,100 to more than 3,300. Classes, offered by the EEC, have grown steadily and reached 23 for SP 2012.

Classes Offered - The EEC was originally supported by full-time, St. Louis-based faculty and faculty driving from Rolla to teach classes. Courses are now taught by adjuncts and delivered over the Internet.
Continuing Education

DCE coordinates professional development short courses, seminars, and peer-reviewed conferences with international audiences.

- Primarily face-to-face
- International and regional conferences
- Summer camps for youth

- Just over $1 million in revenue
- 3,000 + participants
- Awarded over 7,000 PDHs

Online Delivery
CDC input incorporated into delivery

GM Partnership

- Over 100 unique users from 11 different countries
- 10 courses tailored to GM requirements

Delivery Methods

- **Face-to-Face**
  (on location or on campus)

- **Online** (Live or recorded)

- **Webinars**
Corporate Partnerships

Lockheed Systems and Software Architect Certificate
2011 GM TEP Education Fair

Certificate in Paint Technology and Process Control
CPTPC Learning Objectives

- Provides a solid foundation regarding coatings processes relevant to GM, including knowledge of current and future technologies for pre-coat, primer, topcoat, sealing, etc.

- Provides knowledge of effective problem-solving techniques relative to equipment installation, quality issues, and process improvement as it relates to paint processes.

- This certificate is suitable for chemical, electrical, industrial, and mechanical engineers and those involved or interested in the development, production, or application of automotive coatings.
Moving Forward with Online Non-Credit

Online Professional Development

Asynchronous courses delivered in short segments that allow professionals to quickly acquire new material without serious work interruptions.

Exams and certificate of completion are automatically generated.

Online e-commerce access to all courses.
The following courses are part of General Motor's Paint Technology and Process Control Certificate:

**Introduction to Programmable Logic Controllers**
Instructor: Dr. Kelvin T. Erickson
(5.0 professional development hours)
This course covers the basic operation and hardware of a programmable logic controller (PLC) and includes case studies. It is intended for engineering or technical personnel who want to learn the basics of Allen-Bradley programmable logic controllers (PLCs), primarily the PLC-5 and ControlLogix.

**Introduction to the Coatings Systems**
Instructor: Dr. Michael R. Van De Mark
(12.0 professional development hours)
This course covers the composition of paints to the evaluation of the dry film. The pigments, resin, solvents and additives are discussed, including their influence on the coatings performance. Color measurement, surface profile, and other evaluation criteria will be related to composition.

**Sealer Materials and Dispensing Equipment**
Instructor: Dr. Thomas Schuman
(2.0 professional development hours)
This course provides an overview of the sealer coatings, equipment and key design considerations of a paint shop "sealer" delivery system. A sealer delivery system includes a variety of components such as piping, hoses, fittings, valves, pumps, etc., that help move material from the bulk supply area to the point of use in a paint facility. The course covers basic sealer terminology; system components and operation, system design concepts, and basic pressure drop analysis.
Viscosity

measure of the energy dissipated by a moving fluid.

\[ \text{N m}^{-2} \text{ sec} = 0.1 \text{ Pa} \cdot \text{ sec} = 1 \text{ dyne cm}^{-2} \text{ sec} = 1 \text{ Poise} \]

[Energy] * time / volume

r: [force] (pressure) = \( \eta \) * [velocity] / [surface area] * [gap]

Or: Energy = viscosity * flow rate
Round Table Discussion

1. In general, what type of education and/or training needs will exist in companies over the next five years?

2. How does S&T identify these needs?

3. What steps do we take to make companies aware of S&T capabilities and to create partnerships that address these needs?

4. Once created, how is awareness developed within the company?

5. What communication mechanisms do you consider the most effective?
   - Advertisements in professional journals
   - Billboard advertising
   - Conference attendance
   - Attendance at company educational fairs
   - TV and newspaper ads
   - Company newsletters

6. What range of pricing is acceptable within companies? What are current reimbursement policies?
Questions?

Dr. Henry Wiebe
Vice Provost of Global Learning
Phone: 573-341-4132
Email: wiebe@mst.edu