# Emerging Technologies Course No. 21053 Credit: 1.0

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| --- | --- | --- | --- |
| **Student name:**  |  | **Graduation Date:** |  |

Pathways and CIP Codes: **Engineering & Applied Mathematics (14.0101)**; Biochemistry (14.1401); Biomedical (14.0501)

Course Description: An **application leve**l course that emphasizes students’ exposure to and understanding of new and emerging technologies. The range of technological issues varies widely but typically include lasers, fiber options, electronics, robotics, computer technologies, CAD/CAM, communication modalities, and transportation technologies.

Directions:The following competencies are required for full approval of this course. Check the appropriate number to indicate the level of competency reached for learner evaluation.

**RATING SCALE:**

4. Exemplary Achievement: Student possesses outstanding knowledge, skills or professional attitude.

3. Proficient Achievement:Student demonstrates good knowledge, skills or professional attitude. Requires limited supervision.

2. Limited Achievement:Student demonstrates fragmented knowledge, skills or professional attitude. Requires close supervision.

1. Inadequate Achievement:Student lacks knowledge, skills or professional attitude.

0. No Instruction/Training:Student has not received instruction or training in this area.

## Benchmark 1: Click or tap here to enter text.

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 1.1 | Demonstrate the research skills necessary to identify and evaluate emerging technologies |  |
| 1.2 | Seek and identify sources of information on new technology. |  |
| 1.3 | Identify solutions and problems that go beyond the expected and obvious. |  |
| 1.4 | Identify sciences and technology areas most impacted and with most potential to utilize the new technologies. |  |
| 1.5 | Be able to explain why it is important for STEM professionals to keep abreast of evolving technologies. |  |
| 1.6 | Be able to discuss the advantages, disadvantages, and prospects of current emerging technologies. |  |
| 1.7 | Discuss in depth a chosen emerging technology, based on independent research. |  |
| 1.8 | Explain the change process. |  |
| 1.9 | Develop a plan for anticipating change. |  |
| 1.10 | Address each of the following areas to varying degrees based on available information:  |  |
|  | 1. anticipated employment
 |  |
|  | 1. drivers and constraints
 |  |
|  | 1. size and location of market
 |  |
|  | 1. connection(s) to existing technologies
 |  |
|  | 1. ability and ease of replication
 |  |
|  | 1. physical and capital costs
 |  |
|  | 1. industry and education partnerships to be leveraged
 |  |
|  | 1. national best practices
 |  |
|  | 1. illustrate qualifications, recommendations, aims and approaches for the Technological innovation
 |  |
|  | 1. Innovation system modeling
 |  |
|  | 1. Technology monitoring forecasting and assessment
 |  |
|  | 1. Trend analysis methods & scenarios
 |  |
|  | 1. Impact assessment
 |  |
|  | 1. Risk analysis
 |  |
|  | 1. Action (policy) analysis
 |  |
|  | 1. Technology road mapping
 |  |
|  | 1. Communication and implementation of innovation forecasts.
 |  |

I certify that the student has received training in the areas indicated.

Instructor Signature:

For more information, contact:

CTE Pathways Help Desk

(785) 296-4908

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