

SOUTH DAKOTA BOARD OF REGENTS

Committee on Academic and Student Affairs

AGENDA ITEM: II – E (3)

DATE: June 10-11, 2015

SUBJECT: New Certificate Request: SDSM&T Graduate Certificate in Petroleum Systems

South Dakota School of Mines and Technology (SDSM&T) requests authorization to offer a graduate certificate in Petroleum Systems. The intended audience for the certificate includes those with relevant BA/BS degrees in engineering and/or science looking to expand their skill sets in petroleum and related fields, including working professionals and SDSM&T graduate students. The proposed certificate matches current trends in the professional and academic markets as efforts to prepare a future workforce in the oil and gas industry. The proposed certificate requires 12 credit hours and includes one new elective course.

RECOMMENDED ACTION OF THE EXECUTIVE DIRECTOR

Approve SDSM&T's new certificate request for a graduate certificate in Petroleum Systems as described in Attachment I.

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Certificate Request

This form is to be used to request approval for a new certificate program that includes currently offered courses. A certificate program is not a major or minor. Refer to BOR policy 2:23 Certificate Programs.

SDSM&T	Geol/Geol Engineering	Dr. Richard Sinden	02/09/2015
Institution	Division/Department	Institutional Approval Signature	Date

1. Name of Program: Certificate in Petroleum Systems

2. Provide a justification for the program.

The connection between quality of life and energy and mining workers is simple: The nation and the world depend on energy and mineral resources to keep their people and economies thriving, and a skilled workforce is essential to meet the nation's and the world's energy and mineral needs.

Job growth in the geosciences by 2020 is expected to be 20% above the national average for all occupations, according to the Bureau of Labor Statistics. Petroleum production in the US increased ~1 million barrels per day last year, one of the largest increases in history. This increase is driven by activity in the Bakken and Eagle Ford shales in North Dakota and Texas, both are unconventional reservoirs that require hydraulic fracturing and which use significant amounts of water and pose a wide spectrum of engineering and environmental challenges. The South Dakota School of Mines and Technology, with its focus on engineering and science across a broad range of disciplines and its physical location in the heart of the increased activity, is particularly well positioned to provide research for industry and graduates prepared to enter the energy sector.

Thus, it is evident that university curricula need to provide professionals with the knowledge and skills that are increasingly becoming essential for meeting the demands of a rapidly changing world to provide them with a competitive edge in a global job market.

In line with the current "energy" trends in the marketplace, many universities across the US have been developing similar certificate programs in energy and environment and have focused considerable effort towards training the future work force for oil and gas industry.

The majority of the courses are available in the certificate are already offered at SDSMT, and there are no additional costs associated with this program. GEOE 512 Science and Engineering Field Applications is a summer course, and costs for the additional instructor(s) will be self-supported.

3. Who is the audience for the program?

The program is geared toward graduate students and professionals with relevant BA/BS degrees in engineering and/or science who are looking to expand their skill sets in petroleum and related fields or who are looking to retool and retrain for a new career. The program will be attractive to current

SDSMT graduate students who wish to earn formal documentation of their skills. It will also serve agencies and companies who want to give their employees advanced training in these fields.

Students interested in careers in oil and gas industry who participate in this program must complete a minimum of 12 credits of course work from the approved list to satisfy the certificate program requirements. These courses are tailored to meet the needs of industry and provide a focused curriculum of classes and cross training.

4. List the courses to be completed, the credit hours of each course, and the total number of credit hours required for the program.

Prefix	Number	Course Title	New*	Hours
GEOE	512	Science and Engineering Field Applications (Petroleum Field Camp section only)	N	3
GEOE	561	Petroleum Drilling and Production Engineering	N	3
GEOE	567	Introduction to Geomechanics	Y	3
GEOL	522	Tectonics and Sedimentary Basin Analysis	N	3
GEOL	576	Petroleum Geology	N	3
GEOL	632	Rocky Mountain Stratigraphy	N	3
GEOL	725	Geodynamics	N	3

Total Credit Hours Required

12

5. Proposed CIP code _____ **14.3901** _____

6. Effective Date of Certificate Program _____ **Fall 2015** _____