The South Dakota School of Mines & Technology will offer a new Master of Engineering degree beginning fall 2016, designed for engineers employed in or preparing to enter technical management roles in business and industry.

An alternative to research-oriented master's degrees, the Master of Engineering (M.Eng) is a professional program with a focus on both technology and management.

The program will also support engineers in maintaining or obtaining licensure, while strengthening their leadership skills.

The degree program requires 30 credits to complete and is offered in three technical areas: Civil & Environmental Engineering, Electrical Engineering or Materials Engineering & Science.

The remaining credits are chosen from an array of management and strategy courses drawn from the SD Mines top-ranked online master's programs.

No thesis is required for the degree, and the delivery of the program will be a mix of traditional face-to-face courses, hybrid courses and online courses.

“At a certain point in their careers, a bachelor's degree is not always enough,” said Heather Wilson, President of the School of Mines. “Rising executives in engineering and scientific fields need a greater focus on management than the traditional research-oriented advanced degrees. We hope to meet that need.”

Recently approved by the South Dakota Board of Regents, after full implementation, SD Mines expects to graduate about 40 students annually.

“The new master's program will provide professional development and career advancement opportunities for graduates, as well as a competitive advantage for organizations that employ them. This degree will provide graduate, professional and continuing education focused on traditional and adult learners across the state, in the region, the nation and globally,” said Dean of Graduate Education Douglas Wells, Ph.D. Learn more at www.sdsmt.edu/MEng.
Forty percent of the state’s prestigious Dakota Corps Scholarship recipients will enroll at the South Dakota School of Mines & Technology this fall.

Of the 40 recipients of the full-tuition scholarships to colleges within the state, 16 are incoming freshmen at South Dakota Mines, with intended majors of computer science and chemical, electrical, civil, industrial and mechanical engineering to help fill critical-need occupations in the state.

The recent South Dakota high school graduates will receive scholarships equal to the cost of college tuition and fees, with the stipulation they work in the state, serving the same number of years plus an additional year that the scholarship was awarded.

“The Dakota Corps Scholarships are very competitive and very generous. We are looking forward to welcoming these top-caliber students to Mines and are also pleased that they will be staying in South Dakota after graduation,” said SD Mines President Heather Wilson.

Announced by the governor's office, scholarships are supported entirely by private donations.

“These students are giving back to our state with the important work they perform in critical-need occupations,” said Gov. Dennis Daugaard. “Dakota Corps ensures these students are educated in South Dakota, remaining here to provide important services and support for fellow South Dakotans. We are grateful to the private businesses and non-profit organizations that recognized the importance of providing these students with scholarships.”

Current occupations that qualify for Dakota Corps Scholarship support include teaching K-12 special education; teaching K-12 foreign languages; teaching high school math, science, or career and technical education; working as an accountant or auditor; working as an engineer (all fields except mining); working as a registered nurse; or working in the information technology field (computer science, information assurance and information security).

Incoming SD Mines freshmen announced as new Dakota Corps Scholarship recipients:

- Jeremy Dalldorf, Milbank, Milbank High School
- Stephen Diede, Aberdeen, Central High School
- Caleb Furse, Custer, Custer High School
- Samuel Gusso, Yankton, Yankton High School
- Kayla Huber, Spearfish, Spearfish High School
- Cody Kronsfiel, Vermillion, Vermillion High School
- Emelia Nelson, Mina, Central High School
- Justin Nielson, Brookings, Brookings High School
- Taylor O'Brien, Rapid City, Central High School
- Hunter O’Connor, Sioux Falls, Washington High School
- Emily Parks, Mitchell, Mitchell High School
- Juel Pluimer, Spearfish, Spearfish High School
- Bryan Waugh, Spearfish, Spearfish High School
- Connor Weber, Aberdeen, Central High School

The South Dakota Board of Regents administers the Dakota Corps Scholarship program. For more information about this program, contact the board office at (800) 874-9033 or DakotaCorps@sdbor.edu.
Science Teachers Learn Green Chemistry Activities for their Classrooms

The South Dakota School of Mines & Technology led 24 middle and high school science teachers through hands-on green chemistry investigations that they can take back to their classrooms through the “Green Chemistry and Sustainable Energy Education.”

Green chemistry refers to chemical products and processes that reduce or eliminate hazardous substances. Incorporating green chemistry into middle and high school curricula puts chemistry in an entirely different perspective than ever before, said Tsvetanka Filipova, Ph.D., Mines chemistry lecturer who led the professional development program for teachers.

Activities that use low-cost and safe materials should be especially beneficial for teachers at schools with few resources for science activities. Learning activities covered included practices, crosscutting concepts and disciplinary core ideas from the framework for South Dakota K-12 science education standards.

“Green chemistry broadens student’s connections with nature and the environment, deepens their understanding of environmental challenges facing society and provides motivation to develop science projects related to those challenges. We also hope it can inspire some to pursue careers in science or engineering,” Filipova said.

Participating teachers were from Oglala Lakota and Hill City School districts, Rapid City School district, Northwestern Area School, Little Wound, Loneman School, Harding County, Red Cloud Indian school, Sanborn Central school, Calvary Christian school, Lemmon school, Lead Deadwood school and St. Thomas More school. Educators teach middle school science classes and high school chemistry, physical science, AP chemistry, physics and biology. One was a kindergarten teacher.

The program was sponsored by a No Child Left Behind grant from the South Dakota Board of Regents and a collaborative effort between South Dakota Mines, BHSU, Oglala Lakota County School District and Hill City School District.

Intern Spotlight
Taylor Evans
Caterpillar

Taylor Evans, a junior industrial engineering major from Rapid City, is interning this summer at Caterpillar in Aurora, Ill., working as a collaboration engineer in the Global Supply Network Division for the Large Wheel Loaders. One of her projects is managing and overseeing the Paint Before Assembly (PBA) project. During her internship Taylor has managed 178 PBA parts. She is a graduate of Rapid City Central High School.
The 2016 Summer Camps program hosted nearly 150 high school students who traveled from 30 states and as far away as Rwanda for personal attention and hands-on experiences doing what South Dakota Mines does best – engineering and science.

This year’s camps ranged from 3D printing to mining explosives, from paleontology to bridge building, from green chemistry to entrepreneurship. The unique, high-quality residential camps offered students the opportunity to engage in field and lab experiments and make connections nationwide.

Over 50 need-based scholarships were awarded.

The goal is to encourage the next generation to pursue careers in science, technology, engineering and math and get a taste of college life.

Students spent a week working one-on-one with professors to get a Ph.D.-level experience with state-of-the-art laboratory equipment as well as conducting field experiments. Campers also toured engineering companies and explored activities and attractions for which the Rushmore Region is famous.

About one-third of campers were from South Dakota, but students also traveled cross country from states such as New York, Pennsylvania, South Carolina and Michigan.

The longest distance traveled, however, was 11,000 miles from Africa.

Gretha Teta attended the June 20-24 Mining and Explosive mining engineering camp from Kigali, Rwanda. The camp included field trips to Cloud Peak’s Cordero Rojo coal mine near Gillette, Wyo., Coeur’s Wharf gold mine near Lead and Pete Lien’s limestone quarry in Rapid City. Campers also set off explosives of their own such as detonation cord and dynamite in a field near Piedmont.

“The opportunity to participate in the summer mining engineering camp at SD Mines has proved to be invaluable to my academic advancement. When I went to the camp, I had no familiar face with me, but the camp helped me get out of my comfort zone and chat with new people,” Teta said. “Interacting with other highly motivated students from diverse backgrounds who share my interests and my passion for mining engineering has provided me a rich environment in which I learned and grew. This has increased my motivation to continue to pursue a career in the field.”

Teta was provided a Mines scholarship to help offset camp registration. Cloud Peak provided additional help to fund the cost of Teta's travel and support her visa application.

“The campers who attended our camps were the kind of quality student that we already find on our campus. Their education and their futures were positively impacted, and they made lasting connections with our faculty, community and Rushmore Region. I am excited to see these students become future Hardrockers,” said Taylor Davis, SD Mines camp coordinator.

South Dakota Mines will host 10 summer camps next year, with registration opening in August.

View photos from the 2016 Summer Camps on our Flickr album.
Ryan Treptow Named Hardrocker Golf Coach

South Dakota School of Mines & Technology is pleased to announce the hiring of Ryan Treptow as the new head coach of the women’s golf team.

“Ryan brings over 10 years of quality experience to our women’s golf program as a coach and instructor, as well as numerous years of playing experience,” said Hardrocker Athletic Director Joel Lueken. Treptow, originally from Minnesota, is also the assistant golf professional at Arrowhead Country Club in Rapid City. As the assistant pro, Treptow has gained valuable experience teaching the game of golf that will transition to helping the Lady Hardrockers continue to be competitive in the Rocky Mountain Athletic Conference (RMAC).

“I am looking forward to the upcoming season and thrilled to coach while getting to know each scholar-athlete in the golf program at SD Mines,” Treptow said. “The opportunity to lead talented scholar-athletes in reaching their potential is an aspect of coaching that excites me while offering structure within each practice session, and a syllabus to reflect on provides players the foundation upon which to improve, build trust and enhance confidence in their game.”

Before joining Arrowhead Country Club in 2014, Treptow spent six years overseas in South China and Hong Kong as an English teacher, golf instructor, writing coach, tutor and volunteer. He volunteered at the Hong Kong Open from 2011-2013 as mobile score official.

During his time in China, Treptow also served as a golf coach at the United International College in Zhuhai, Guangdong, China, from 2008-10. During that time he taught university students the fundamentals of golf, including rules, proper grip, alignment, stance, posture and swing keys.

“Treptow takes over the SD Mines women’s golf program from Cody Peterson, who helped the Lady Hardrockers transition to NCAA Div. II and RMAC competition. The Lady Hardrockers will begin their third season as members of the RMAC.”

Brian Hardy Joins SD Mines as Assistant AD of Sports Medicine

Mines is pleased to announce the hiring of Brian Hardy as the assistant athletic director of sports medicine for Hardrocker athletics, a new position at SD Mines.

Hardy will head the Hardrocker sports medicine team, which provides athletic training services to all 12 intercollegiate athletic programs, as well as assist Athletic Director Joel Lueken in managing the SD Mines athletic department.

Hardy comes to SD Mines after serving in the same role at the University of Colorado, Colorado Springs, for the past 12 years. While at UCCS, he was able to provide advice on various facets of daily operations, as well as future goals and missions for the entire UCCS athletic department.

Additionally, Hardy oversaw daily operation of the UCCS Mountain Lions’ 14-team intercollegiate sports medicine program, including graduate assistant management, insurance management and policy and procedure development, program budget and ordering, as well as scheduling and physician relationships.

“Brian brings a wealth of experience and leadership not just to our sports medicine staff but the Hardrocker athletic department as a whole,” Lueken said. “I’m thrilled to welcome him and his family to our Hardrocker family.”

Hardy was also serving as a certified athletic trainer for USA Volleyball, where he provided sports medicine coverage for athletic injury diagnosis, management, treatment, education and referral at domestic competitions as well as various national team camps at the Colorado Springs Olympic Training Center for primarily youth and junior athletes. USA Volleyball is the national governing body for the sport of volleyball in the United States and is recognized by the United States Olympic Committee.

Hardy also held the position of the head athletic trainer for the Mountain Lions from 2003-2004 and was the Health South Sports Medicine Coordinator from 1999-2003 in Colorado Springs.

SD Mines researchers Sui (Jay) Tung and Timothy Masterlark, Ph.Ds., were selected for the cover of the Journal of Geophysical Research – one of the most competitive and prestigious journals for geophysics research.

The accompanying article analyzes GPS and satellite radar data to estimate the rupture characteristics of the Magnitude 7.8 earthquake that rocked Nepal in 2015, claiming thousands of lives. Mines researchers constructed numerical models that simulate how rupture along a fault in the Himalayan Mountains translates to deformation of the land surface. They then tackled the more challenging inverse problem of using observable surface deformation gathered through satellite data of the Earth’s surface to see the dynamic processes of Plate Tectonics deep within the earth.

These significantly advanced numerical tools – designed, constructed and executed at SD Mines – will allow researchers to better understand and quantify seismic hazards for earthquake-prone sites anywhere in the world.

The selection process for a cover photo is extremely competitive, with a short list recommended by peer reviewers from submissions worldwide and final selection by the journal's editor, chosen for visual appeal and representation of cutting-edge research.

The journal is available online here.

Tung is a postdoctoral research scientist, and Masterlark is a professor, both in the Department of Geology & Geological Engineering.

Hardrocker Night Hits Main Street Square, Central States Fair

The South Dakota School of Mines & Technology invites the community to Hardrocker Night at Main Street Square from 6-9 p.m. Thursday, Aug. 18, and again at the German Tent at the Central States Fair at 7 p.m. Wednesday, Aug. 24.

The Aug. 18 event will feature the band Crash Wagon, liquid nitrogen ice cream, a chemistry magic show and a variety of student-designed vehicles like the Formula race car. Student athletes and the university mascot Grubby will interact with families and distribute game schedules. The event is free and open to the public.

Hosted by the Rushmore German Club, the Aug. 24 event will feature German food, music and dancing at the Central States Fairground. The event is free and open to the public, however there is a $3.00 gate fee to enter the fair. The Society of Physics Students will also compete in the pig wrestling contest at this year's fair.
Inaugural Startup Weekend Black Hills Set for September 16-18

The first-ever Startup Weekend Black Hills, to be held Sept. 16-18, will bring together designers, developers, entrepreneurs, students, and experts of all stripes to form real start-ups. Beginning with Friday night pitches and continuing through testing, business model development, and basic prototype creation, Startup Weekends culminate in Sunday night demos to a panel of potential investors and local entrepreneurs.

Startup Weekend will equip attendees with the resources, connections, and knowledge to go from idea to execution. And as they learn how to create a real company, they’ll meet the very best mentors, investors, cofounders, and sponsors who are ready to help them get started.

Startup Weekend has held 2000+ events in 135+ countries around the world.

Learn more at: http://swbh16.com/

Women’s Track & Field Earns All-Academic Team Honors with Highest GPA in RMAC

The South Dakota School of Mines women’s track and field team continued their academic excellence this season. For the fifth-straight year, they have been honored by the U.S. Track & Field and Cross Country Coaches Association (USTFCCCA) as an All-Academic Team.

“In an era when some universities compromise scholarship for athletic success, Mines doesn’t. At Mines, we have no easy degrees, and our scholar-athletes have higher average GPAs than the student body as a whole. Track and field is leading the way. We are very proud of their achievements in the classroom and on the track,” said Mines President Heather Wilson.

The Lady Rockers posted a team GPA of 3.49, which registered them as the highest in the Rocky Mountain Athletic Conference and put them in a tie for the 12th best team GPA across all NCAA Div. II women’s track and field programs.

A LOOK AHEAD

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About Legacy News

Legacy News is produced by the Office of University Relations the first Wednesday of each month. The newsletter is a compilation of news releases, photos and Web articles.

To submit news or story ideas or to subscribe to the email distribution list, please contact Dani Mason, public relations officer, at 605.394.2554 or at Danielle.Mason@sdsmt.edu.

For more Mines news, visit news.sdsmt.edu

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