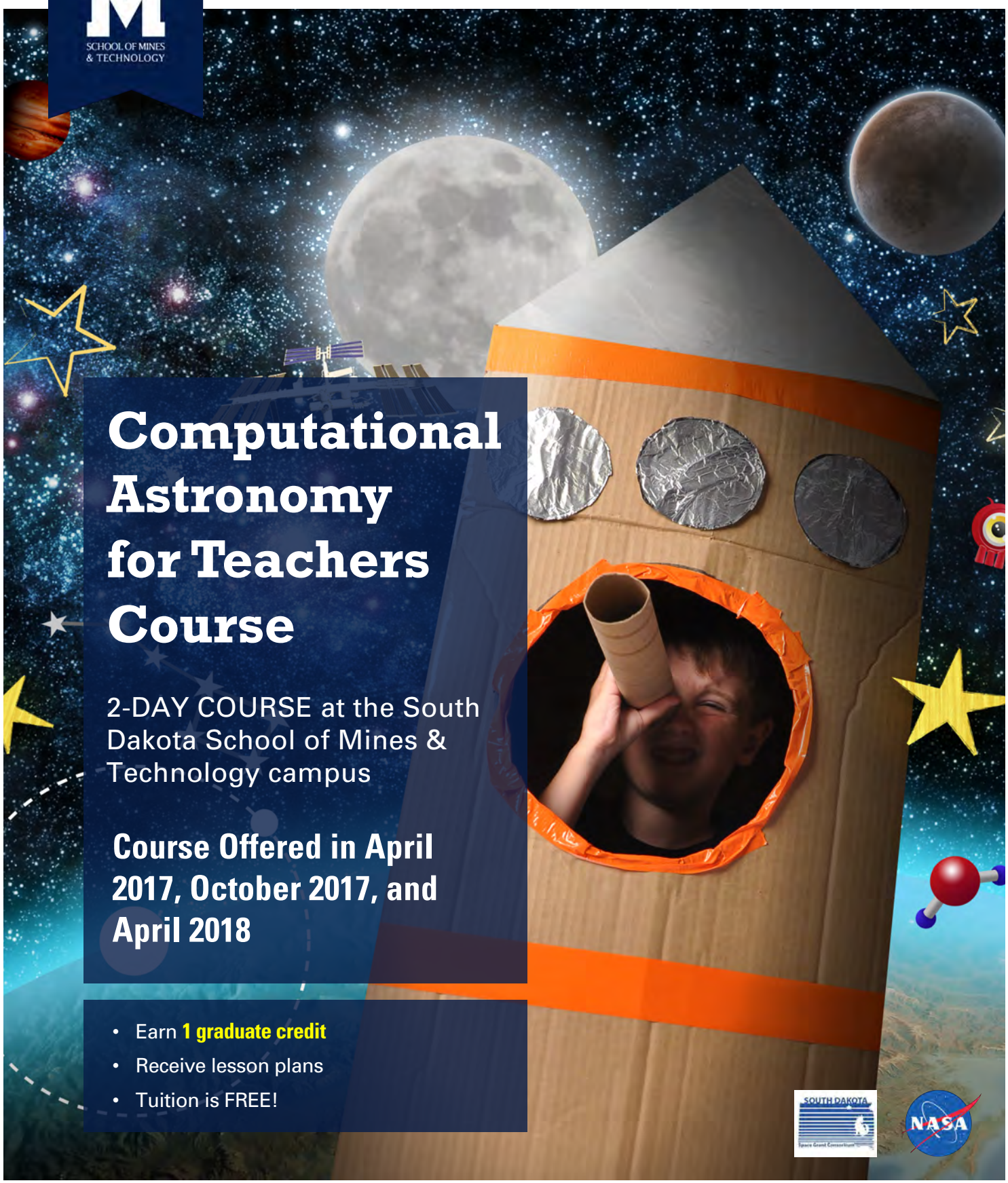
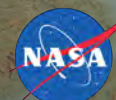


Computational Astronomy for Teachers Course

2-DAY COURSE at the South
Dakota School of Mines &
Technology campus

Course Offered in April
2017, October 2017, and
April 2018

- Earn **1 graduate credit**
- Receive lesson plans
- Tuition is **FREE!**



► Computational Astronomy for Teachers Course

Introduction:

Today's students live in an age of great space discoveries, and many of them are fascinated by what they hear or read. However, solid understandings of math principles are the building blocks in developing our nation's future engineers and scientists.

This project addresses the need to expand STEM education in South Dakota in the field of space science. The result of this effort is expected to be an increase in the number of students interested in learning and understanding mathematics.

The goal is to instill in the middle/high school age student the desire to learn and understand mathematics through the exploration of space.

The proposed work is in alignment with the new math initiative between the Rapid City School Superintendent and SDSMT's president to boost interest by showing students that math can be engaging, and it can lead to rewarding career.

Educational Opportunities:

1. Two-day workshops for SD Math and Science Teachers (ED-699, 1cr).
2. September 2017: weekly sessions with night-sky exploration for students and their parents/relatives.
3. Bi-weekly two hour sessions for middle/high school students living in the region served by SDSMT to instill the spirit of exploration of space through understanding applied math in the field.

NASA Two-day workshops for Math and Science Teachers (ED-699, 1cr):

April 28-29, 2017

Oct. 6-7, 2017

April 13-14, 2018

Logistics:

- Workshops on SDSMT campus in Rapid City
- Earn an educational credit
- Tuition is waived for participants
- Teachers will need to make their own housing arrangements
- Maximum 15 participants for each workshop

Description:

Teacher participants will learn about math applications used in astronomy and space exploration, with the goal of being able to use the knowledge in their own classrooms. Through carefully selected material, the workshop will emphasize connections between mathematics and space science.

Topics Include:

- Kepler's laws
- Computation of planetary masses
- Light speed
- Black holes
- Distances within the solar system and beyond
- Applications to man-made satellites
- An evening of telescopic observations weather permitting.

Other Opportunities:

September 2017: weekly sessions for night-sky exploration for students and their parents/relatives.

- Kickoff for the fall and spring activities for students
- Schedule for activities will be listed on the SDSMT website and also advertised through PR office
- Will include hands on activities for students and their relatives and night-sky exploration

Bi-weekly sessions, for middle/high school students living in the region served by SDSMT to instill the spirit of exploration of space through understanding applied math in the field.

- Teachers will sign up for the day they choose to bring their class (SDSMT website)
- Activities on SDSMT campus
- Two hour sessions