



## **STEM in Secondary Licensure Programs**

### **Undergraduate Degrees**

The University of New Mexico offers undergraduate and graduate degrees in Secondary Education. There is a licensure program at the undergraduate level, an alternative licensure and a licensure with MA degree as approved pathways to licensure with the State of New Mexico. Of the 12 undergraduate degrees in Secondary Education, 5 are STEM related:

BSED in Earth Science      BSED in Life Science      BSED in Mathematics  
BSED in Physical Science w/ Chemistry      BSED in Physical Science w/ Physics

The required STEM courses in these degrees focus on a wide range of sciences (including biology, chemistry, physics and earth and planetary sciences) and mathematics as well as an in-depth understanding of one of the disciplines. Students come to the professional sequence (pedagogy component) of the degree with a strong STEM content.

The pre-professional and professional courses focus on developing the New Mexico competencies for Level 1, the specific licensure requirements and entry level science and mathematics competencies as well as understandings, dispositions and knowledges of the UNM College of Education Mission that support the development of excellent teachers.

### **Graduate Degrees**

The University of New Mexico Secondary Education Program faculty support the use of best practices for STEM teachers. Experienced professionals in Science, Mathematics and Education teach the courses using the strategies of inquiry, questioning and defining problems, using models, engaging in models, analyzing and interpreting data, using mathematics and computational thinking, constructing explanations and designing solutions and engaging in argument from evidence (NRC, 2014).

The alternative licensure and MA with Licensure are programs to support the development of second career adults who seek to join the teaching ranks. STEM students are a priority in this group and are encouraged to apply and participate in the two semester process of completing the courses for New Mexico licensure. The Advanced Alternative Licensure Program is one of the examples of how STEM professionals can enter the field of teaching.

### **Clinical Experience**

The Secondary Education program is currently piloting clinical experiences with teachers at specific high schools. These are Community schools that “focus on the integration of academics, health and social services, and youth, family and community engagement and development, as a strategy to improve student learning and facilitate stronger families and healthier communities” APS website. Student teachers, cooperating teachers, embedded faculty and STEM faculty support the development of the student teachers in a comprehensive experience. Deep engagement and cross curricular collaboration between student teachers, cooperating teachers, embedded faculty and STEM faculty are critical elements of this pilot.