**BA IN GEOLOGY + MAT IN ADOLESCENCE ED: EARTH SCIENCE**

**Program Overview**

**Education Coordinator**
Latanya Brandon, (845) 257-3118, brandonl@newpaltz.edu

**Content Coordinator**
Frederick Vollmer, (845) 257-3760, vollmerf@newpaltz.edu

**Program ID**
102E

**Credits**
122 UG + 30 GR

**Program Length**
The MAT can be completed in one additional year of study if enrolled full-time, but students must complete the degree within 5 years.

**Modality**
In-person

**Full-time/Part-time**
Full-time or Part-time

**Transfer Credits**
6

**Capstone**
Practicum

**Certification/Licensure**
NYSED Initial/Professional Adolescent Education: Earth Science

**Program Description**
We've developed this program in response to popular demand from students and parents who have called for a pathway to fulfilling jobs in education and science, and to school districts who report an increasing number of full-time job openings in STEM disciplines. Graduation from the Five-Year Master Plan empowers students with options to choose the career they find most fulfilling, whether that means becoming a science teacher, working as a chemist, or pursuing a Ph.D.

**How does it work?**

**ENROLL** in the Five-Year Master Plan and begin taking foundational science courses as a first-year student.

**MAINTAIN** a 3.0 GPA as you take embedded education courses and pursue your Bachelor of Arts (BA) degree in Geology.

**QUALIFY** for early admission to the graduate program during your junior year.

**EARN** your BA degree in four years, while taking education courses to prepare for your accelerated graduate program.

**COMPLETE** the MAT program, including all student teaching requirements in just one year.

**Admission Requirements**
To participate in the BA/MAT program in Geology, interested undergraduates should:

1. Submit a Declaration of Major/Change of Major form indicating the BA/MAT program in Geology (major 51ES) to the office of Records and Registration (Wooster Hall, rm. 115).

2. Meet with Professor Latanya Brandon to begin selecting courses. Maintain a GPA of 3.0 to fulfill admission requirements for the graduate program.

**Early Admission to Graduate Program**
During their junior year, students finalize their early admission to the Master of Arts in Teaching program:

- Apply using the link above.
- Create an account or log in and follow the steps.
- Select the fall term when you would like to begin your graduate coursework and major code (102E).

**NOTE:** This program only admits for the fall term.
- Select “BA Geology/MAT Adolescence Ed: Earth Science Program” as the intended curriculum.

**Upload Checklist Items**
To expedite a faculty review of an application, students may upload the following items:

- Admission Essay
  - Reflect on a time when your idea or belief was questioned or challenged. Or, conversely, reflect on a time when your idea or belief was validated. What happened? In what way(s) could this time be considered a learning experience?

As you reflect, please include at least one reference to the School of Education’s Conceptual Framework and discuss how it speaks to your experience.

- Student copies of transcripts* from every college/university attended

* Full admission REQUIRES the submission of official transcripts and test scores.

**Check Your Application Status**
- Check your application status via the applicant portal.

**BA in Geology**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fall</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education Seminar</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ENG160</td>
<td>Composition I</td>
<td>3</td>
</tr>
<tr>
<td>CHE201</td>
<td>General Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHE211</td>
<td>General Chemistry I Lab</td>
<td>1</td>
</tr>
<tr>
<td>MAT251</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>GLG201</td>
<td>Physical Geology</td>
<td>3</td>
</tr>
<tr>
<td>GLG211</td>
<td>Physical Geology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td><strong>Credits</strong></td>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

| **Spring** |                                         |         |
| ENG180 | Composition II                        | 3       |
| CHE202 | General Chemistry II                 | 3       |
| CHE212 | General Chemistry II Lab             | 1       |
| GLG202 | Historical Geology                   | 4       |
| MAT252 | Calculus II                          | 4       |
| SED354 | Foundations of Secondary Education Seminar | 1       |
| **Credits** |                                         | 16      |
### Year 2
#### Fall
- **PHY201** General Physics 1 3
- **PHY211** Physics 1 Laboratory 1
- **GLG311** Mineralogy and Crystallography 4
- Elementary Foreign Language I 3
- Humanities course 3

**Credits**: 13

#### Spring
- **EDS340** Sociological and Philosophical Foundations of Education 3
- **EDS372** Developing Adolescence 3
- **GLG314** Petrology 4
- **PHY202** General Physics 2 3
- **PHY212** General Physics 2 Lab 1
- Elementary Foreign Language II 3

**Credits**: 17

### Year 3
#### Fall
- Arts course 3
- **GLG331** Stratigraphy-Sedimentation 4
- **GLG305** Paleontology 4
- **or GLG407** or Hydrogeology 4
- **PHY205** Exploring the Solar System 3
- **or PHY206** or Exploring the Universe 3
- Take the GRE

**Credits**: 17

#### Spring
- **BIO201** General Biology I (or other 4 credit science elective) 3
- **BIO211** Gen Bio 1 Lab 1
- **PHY205** Exploring the Solar System 3
- **or PHY206** or Exploring the Universe 3
- **GLG120** Weather and Environment 4
- **EDS383** Introduction to Literacy for Diverse Learners 3
- Other World Course 3

**Credits**: 14

### Year 4
#### Fall
- **GLG405** Structure and Tectonics 4
- **GLG435** Field Geology 4
- Geology course by advisement 3-4
- Western Civilization course 3

**Credits**: 14-15

#### Spring
- **SED453** Curriculum and Assessment in the Secondary School 3
- **SED535** Field Work #1 1
- **SED536** Teaching and Learning in the Digital Environment 3
- Integrating ELLs in the School & Classroom 3

Graduate education or geology liberal arts elective by advisement 3

**Credits**: 13

**Total Credits**: 121-122

---

### MAT in Adolescence Ed: Earth Science

#### Summer (3 Credits)
Select ONE of the following if offered: discipline-specific education course, an approved diversity course, or an approved course in discipline 3

#### Fall (13 Credits)
Select TWO of the following courses not taken during summer: discipline-specific education, an approved diversity course, or an approved course in discipline 6
- SED543 Science in the Secondary School 3
- SED552 Field Experience II 1
- SPE565 Teaching in Inclusive Classrooms 3

**Credits**: 30

### Academic Standing Requirements for Bachelor's/Master's Students
A cumulative GPA of less than 3.0 in graduate-level courses taken in the undergraduate portion of a 4+1 program precludes the student's good standing. Students with GPA of 2.75 to 2.99 strongly advised to reconsider continuing into GR program. Students below 2.75 may not continue and will be de-matriculated from GR program.

### Undergraduate Program Learning Outcomes

#### BA Geology

**Knowledge Areas**
- Demonstrate mastery of the fundamental knowledge areas in the Geological Sciences.
- Show the ability to read and interpret topographic, geologic, and other maps, and demonstrate map making skills.
- Acquire competency in the supporting fields of Physics, Chemistry, and Mathematics, particularly as related to the Geological Sciences.

**Research Skills**
- Understand and use the scientific method to conduct research, and to be able to critically evaluate scientific work.
- Demonstrate the ability to observe, describe, and interpret geo-logic samples, outcrops, and regions using field data collection techniques and scientific methodologies.
• Have the ability to acquire information resources from scientific journals, geologic databases, internet resources, and other primary sources.

• Apply quantitative methods for problem solving, data analysis, and model formulation.

• Develop the skills to work independently and collaboratively on scientific problems.

**Technical Skills**

• Use a variety of geological field equipment for data collection.

• Use common geological laboratory instruments and techniques.

• Perform quantitative data analysis and interpretation using computers.

**Communication Skills**

• Effectively communicate technical findings and conclusions through written reports using formats and styles required for scientific writing.

• Demonstrate effective communication skills by giving oral presentations in a professional style.

• Use maps, three-dimensional diagrams, and other imagery to communicate factual information and concepts.

**Learning Skills**

• Demonstrate a regional and global understanding of the earth, including tectonic, historical, environmental, and resource management aspects, and their relationship to the human experience.

• Show the ability to describe and interpret a geological outcrop, demonstrating facility in applying scientific knowledge, observational techniques, the ability to synthesize, and communication skills.

• Have group field excursions with faculty members and other students involving the scientific study and aesthetic appreciation of the geological aspects of our world.

**Graduate Program Learning Objectives**

**Adolescence Education Earth Science (MAT)**

Candidates who successfully complete all required components of the MAT Adolescence Earth Science program at SUNY New Paltz will:

• **Content Knowledge:** Enhance content area through synthesizing scientific conceptual understandings with pedagogical practice and implementation.

• **Planning:** Be able to plan lessons in science that are NYSP-12SLS standards-based, are clear and organized, rely upon a variety of appropriate pedagogical practices, include appropriate technologies, and differentiate instruction that provides opportunities to promote appreciation of diversity, tolerance, and inclusion in safe, democratic, and equitable learning environments.

• **Assessment and P-12 Learning:** Be able to choose, design, and implement authentic and appropriate formative and summative assessments to evaluate student learning, consider assessment data when making instructional decisions, and identify effective or problematic teaching moments as they are occurring in order to facilitate student growth in specified content, cognitive skills, and/or social skills.

• **Pedagogical Practice:** Demonstrate the ability to maximize student learning by incorporating content with pedagogical knowledge, utilizing appropriate and effective technology, and implementing a variety of developmentally and contextually appropriate evidence-based instructional strategies to make learning meaningful and relevant for students while teaching.

• **Dispositions:** Exhibit the knowledge, skills, and dispositions necessary to practice an ethically informed and self-reflective philosophy, participate effectively in institutional change, and develop respectful relationships with students, families, communities and colleagues.

• **Critical Thinking and Reasoning:** Clearly articulate an issue or problem; identify, analyze, and evaluate ideas, data, and arguments as they engage in planning, assessing, and teaching; and acknowledge limitations such as perspective and bias as they develop well-reasoned arguments to form judgements and/or draw conclusions that support pedagogical decisions.

• **Information Literacy:** Locate appropriate resources effectively using appropriate tools; evaluate information with an awareness of authority, validity, and bias; and demonstrate an understanding of the ethical dimensions of information use, creation, and dissemination as they relate to the field of education.