INSTRUCTOR
Justin K. Williams, Ph.D.
Office hours MW 2-3 Lee Drain 140. Other times available on request
Office Phone: 936-294-1552
Email: bio_jkw@shsu.edu

Class Time M: 5-8 p.m. (subject to change)
Attendance is mandatory

Text: Scanning Electron Microscopy and X-ray Microanalysis
Joseph Goldstein et al.

GRADING

Test

<table>
<thead>
<tr>
<th>Test</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Lecture test</td>
<td>20%</td>
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<tr>
<td>Proficiency Exam on machine</td>
<td>10%</td>
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<tr>
<td>X-Ray analysis</td>
<td>10%</td>
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<tr>
<td>Sample preparation</td>
<td>10%</td>
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<tr>
<td>Project 1</td>
<td>20%</td>
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<tr>
<td>Project 2</td>
<td>10%</td>
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<tr>
<td>Participation</td>
<td>7.5%</td>
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<tr>
<td>Conduct</td>
<td>7.5%</td>
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<tr>
<td>Grade of Slides from students</td>
<td>5%</td>
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The purpose of this class is to introduce students to the applied and theoretical aspects of scanning electron microscopy, energy dispersive and X-ray microanalysis techniques as they apply to the characterization of materials and biological samples. General use and imaging will be addressed, as well as advanced imaging, and sampling techniques. Students will be required to attend the lecture, participate in classroom discussion, and complete assignments and examinations. Personal projects will include the preparation, imaging, and analytical analyses of their own samples. The primary project will be assigned by Dr. Williams the secondary project must be approved by Dr. Williams by the time listed in the attached calendar. If a student does not have their own samples, they can be provided by Dr. Williams. 10 minute presentations of the project results are required at the end of the semester (see attached calendar).
Calendar

January 28  First Day Introduction/ Class Room

February 4th  SEM set up; Electron bean and lens
February 11  Sample Preparation and coating
February 18  Imaging/ X-ray analysis
February 25  Lecture Test/ Class Room

March 3  Set up times with instructor for individual lessons
March 10th  No class Spring Break
March 17th  Set up times with instructor for individual lessons

March 24th  Proficiency Exam
March 31st Proficiency Exam

April 7  Work on your projects
April 14th  Work on your projects
April 21st  Work on your projects
April 28th  Work on your projects

May 5  Present Projects (May divide into 2 days).
CHAIN OF COMMAND SEM: In case machine is not working follow this list of Chain of Command. If no one is available and you can not get an image after running through trouble shoot list, turn machine off and wait to contact an individual on list (starting from 1).

1) Dr. Justin Williams 4-1552 (Unavailable MW 9-10; W 12-6).
2) Dr. Jerry Cook 4-1540
3) Kevin Callahan

DR. Cook’s lab: The SEM is in Dr. Tami Cook’s lab, do not disturb any equipment in her lab. Do not use the computers in lab, there is a dissecting scope available for use to prepare samples. I will show you which scoop that you can use. Failure to follow rules will result in a 0% for conduct grade.

SEM: The Scanning electron Microscope is an expensive piece of equipment, it is not a toy. Do not photo any specimen that is not approved by the instructor. Placing specimens in machine that are not suitable and are not approved will result in 0% for conduct and specimen preparation.