

## Materials Science Lab – Spring 2018

### Course #: MEC 263 CRN 13142

**Instructor:** John T. Genna, Jr  
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**Telephone:** (860)215-9408  
**Class Hours:** Tuesday 5:00 – 6:40PM Room B106  
**Office Hours:** M 4:00 – 5:00PM  
T 4:00 – 5:00PM  
W 11:00 – 12:00PM  
R By Appointment

#### Required Text & Materials:

- Engineering Materials Properties and Selection, by Budinski, 9th edition  
Publisher: Pearson
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#### Course Description:

In this lab, students will be exposed to selected experiments demonstrating the effects of processing, including heat treatment, on the properties of engineering materials. Standard materials tests are also performed.

#### Course Objectives:

- Students will demonstrate the ability to use appropriate mathematical and computational skills needed for engineering technology applications.
- Students will illustrate an ability to think critically and identify, evaluate and solve complex technical and non-technical problems; demonstrate creativity in designing problem solutions; and conduct and interpret experimental data and outcomes.
- Students will recognize the need to be lifelong learners.

#### Lecture & Lab Performance Criteria:

The above outcomes will be assessed using these performance criteria:

- Mathematical and computational skills-
  - ✓ Ascertain problem conditions by identifying known and unknown quantities in formulating a problem for solution
  - ✓ Demonstrates the correct selection and application of pertinent formulae, principles and concepts.
  - ✓ Pursue solutions in a methodical, logical manner with results correctly explained with sufficient detail and properly documented
  - ✓ Submit problem solutions with a minimum of computational errors, identifying and selecting the correct dimensional units
- Critical thinking-
  - ✓ Show the ability to evaluate the credibility of sources of information
  - ✓ Demonstrate the ability to refine generalizations, establish rational & pertinent assumptions, and avoid oversimplifications

- ✓ Exhibit the ability to generate, analyze / evaluate, and assess multiple engineering problem solution options
- ✓ Produce documentation that reflects organization and application of engineering principles in specifying solution to an engineering problem
- Lifelong learning-
  - ✓ Demonstrate an awareness of what needs to be learned; formulate questions based on research need
  - ✓ Develop a research plan appropriate to the investigative method
  - ✓ Identify, retrieve and organize information
  - ✓ Use a variety of methods and emerging technologies to keep current in the field

**Course Evaluation:** Course evaluation will be based on attendance/participation, lab assignments, exams and a final project/presentation. All coursework should be saved to your flash drive and submitted by the due date. Students are responsible for backing up their files in case of lost/damaged flash drive.

**Grade Computation**

The following is a breakdown of the final grade:

Attendance/Class Participation	10%
Research Paper/Presentation	20%
Lab Reports	70%
<b>TOTAL</b>	<b>100%</b>

**Grading Distribution:**

A	94-100	C	73-76
A-	90-93	C-	70-72
B+	87-89	D+	67-69
B	83-86	D	63-66
B-	80-82	D-	60-62
C+	77-79	F	0-59

**Attendance/Participation:** Class participation is a component of this course because of the diverse backgrounds of the students and the importance of collaboration during the laboratory experiments. Some of the lab reports will be team submitted so it is critical to engage as an active learner and participate (in addition to attending the labs).

**Lab Reports:** There will lab reports for the experiments. Lab reports will be graded on professionalism, accuracy, style and completeness. The details for Lab Report requirements will be distributed in class.

**Research Paper/ Presentation:** Each student will complete a materials research paper (1 – 2 pages) on a material, material processing technique, material development, material impact / innovation, e.g. Materials for Green Technologies. The student will also prepare a 5-10 minute maximum presentation that will be delivered to the class on the last week of the semester.

**Disabilities Statement:** Students with disabilities are guaranteed reasonable accommodation under the provisions of the Americans with Disabilities Act of 1992. Disclosure of a disability must be voluntary and initiated by the student. For further assistance, please contact Matt Liscum in the Office of Disability Services at 860.215.9265 or [mliscum@threeivers.edu](mailto:mliscum@threeivers.edu). Please note that an instructor cannot provide disability accommodations until a student provides the necessary paperwork from the college’s Office of Disability Services.

**Academic Integrity:** Academic integrity is essential to a useful education. Failure to act with academic integrity severely limits a person’s ability to succeed in the classroom and beyond. Furthermore, academic dishonesty erodes the legitimacy of every degree awarded by the College. In this class and in the course of your academic career, present only your own best work; clearly document the sources of the material you use from others; and act at all times with honor.

**Plagiarism:** Plagiarism is the unacknowledged use of another person’s work or ideas in your writing. It is often known as copying word-for-word. However, even paraphrasing without acknowledgement or using the ideas of peers garnered from class discussion or a study group is considered plagiarism. Whether it is conscious or unconscious, plagiarism is a serious academic offense. Your writing for this course, and any other course at TRCC, is expected to be original, and the

product of your own thinking. A student who has plagiarized will receive a ZERO on his/her assignment and may be reported to the Academic Dean and/or Student Services Dean for disciplinary action.

**Technology Statement:** The use of cell phones or other technological devices is not permitted during class time, unless deemed appropriate by the instructor.

**Electronic Learning Portfolios:** All students are required to maintain an online learning portfolio in [Digication](#) that uses the college template. Through this electronic tool students will have the opportunity to monitor their own growth in college-wide learning. The student will keep his/her learning portfolio and may continue to use the Digication account after graduation. A Three Rivers General Education Assessment Team will select and review random works to improve the college experience for all. Student work reviewed for assessment purposes will not include names and all student work will remain private and anonymous for college improvement purposes. Students will have the ability to integrate learning from the classroom, college, and life in general, which will provide additional learning opportunities. If desired, students will have the option to create multiple portfolios.

**Email:** Correspondence by email is considered a method of formal communication. Emailing an instructor is not the same as emailing or texting a friend. Please use a proper salutation, complete sentences, punctuation, proper spelling and identify yourself by name in the body of the email. **Students must use their [college issued email account](#). College issued email is the official mode of communication used by the college to contact students.**

**Class Cancellation:** To determine if the college is closed, please visit the TRCC webpage at <http://www.trcc.commnet.edu/> and/or sign-up for notification through MyCommNet ALERT.

**College Withdrawal Policy:** Course withdrawals are accepted up until the week before classes end. Withdrawal forms are available online or at the Registrar's office. The withdrawal does not have to be signed by the instructor but it is strongly advised that you speak with your instructor before withdrawing. If necessary, you can withdraw over the phone by calling the Registrar's Office at 860.215.9064. Emails and faxes are also accepted. If you are receiving financial aid, it is strongly recommended that you contact the [Financial Aid Office](#) before withdrawing. Withdrawal may affect your financial aid for current and/or future semester(s). It is your responsibility to confirm that the withdrawal has been received.

**The last day to withdraw from the Spring 2018 semester is March 27, 2018**

Class Schedule (subject to change at instructor's discretion):

Week #	Date	Topic
1	1/23	Introduction/ Shop Safety
2	1/30	Measuring and Uncertainty
3	2/6	Metallographic Specimen Sectioning
4	2/13	Metallographic Specimen Sectioning
5	2/20	Metallographic Specimen Mounting
6	2/27	Metallographic Specimen Grinding & Polishing
7	3/6	Metallographic Specimen Etching
8	3/20	Hardness Testing
9	3/27	Practical Exam
10	4/3	Heat Treatment
11	4/10	Heat Treatment
12	4/17	Jominy Test
13	4/24	Jominy Test
14	5/1	Tensile Testing
15	5/8	Papers Due/ Presentations

## SPRING 2018 ACADEMIC CALENDAR

December	26	Tuition Due Date
January	16	Last Day to Withdraw and Receive Full Tuition Refund In Person Senior Registration
<b>January</b>	<b>17</b>	<b>First Day of Classes</b>
January	24	Last Day to Add a Class in Person
January	30	Last Day to Withdraw and Receive 50% Tuition Refund Only. Fees Will Not be Refunded.
February	16	Presidents' Recess – No Classes, College Open
February	19	Presidents' Recess – No Classes, College Closed
March	12-18	Spring Recess – No Classes, College Open
March	22	<b>No Classes at Windham Technical High School site.</b> Danielson classes will be held on Danielson campus
March	27	Last Day to Drop a Class or Withdraw with a Grade of "W" or to Put a Class on Audit or Pass/Fail
March	30	Day of Reflection – No Classes, College Closed
April	1	Graduation Application Due Date
May	4	Last Day of Classes
May	7-13	Final Exams
May	24	Commencement 6 p.m.