

I. COURSE DESCRIPTION: The technician and tradesperson needs to have a fundamental understanding of the microstructure in the metals, which he will be working with. With in class theory and performed labs the student will see the initial structures and the changes that occur subsequent to varied heat treating process

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to:

1. Iron-carbon diagram

Potential Elements of the Performance:

Demonstrate a fundamental understanding of all facets of the iron – carbon diagram. perform simple metallurgical labs

2. Time/temperature/transformation

Potential Elements of the Performance:

Determine and demonstrate a plain carbon steel hardening process as assigned

Identify certain microstructures using a microscope

3. Steel conditioning

Potential Elements of the Performance:

Explain the various steel conditioning processes

Demonstrate a tempering process

Correctly use the temp-color chart

4. Cast Iron

Potential Elements of the Performance:

Identify different cast irons

Recognize differing cast irons with a microscope

5. Non Ferrous alloys

Potential Elements of the Performance:

Recognize and explain properties of aluminum

Identify bronze alloys

III. TOPICS:

1. Iron carbon diagram
2. Time/temperature/transformation
3. Steel conditioning
4. Cast iron
5. Non – Ferrous alloys

IV. REQUIRED RESOURCES/TEXTS/MATERIALS: Practical Metallurgy and Materials of Industry sixth edition (John E Nealy , Thomas J Bertone)

V. EVALUATION PROCESS/GRADING SYSTEM:

Three term tests 60%
Assignments and quizzes 40%
Total = 100%

The following semester grades will be assigned to students in postsecondary courses:

Grade	Definition	<i>Grade Point Equivalent</i>
A+	90 – 100%	4.00
A	80 – 89%	3.00
B	70 - 79%	2.00
C	60 - 69%	1.00
D	50 – 59%	0.00
F (Fail)	49% and below	
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field /clinical placement or non-graded subject area.	
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.	
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the	

	requirements for a course.
NR	Grade not reported to Registrar's office.
W	Student has withdrawn from the course without academic penalty.

VI. SPECIAL NOTES:

Special Needs:

If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Special Needs office. Visit Room E1101 or call Extension 2703 so that support services can be arranged for you.

Retention of Course Outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Rights and Responsibilities*. Students who engage in “academic dishonesty” will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course/program, as may be decided by the professor/dean. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Course Outline Amendments:

The professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Substitute course information is available in the Registrar's office.

<include any other special notes appropriate to your course>

VII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

METALLURGY
<insert course name here>

5

MET 207
<insert course code number here>

VIII. DIRECT CREDIT TRANSFERS:

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.