



Machinist Math II

MFG-138

Course Information:

Semester and year: Spring 2015

Location: MT 146,

Meeting days and times: Thursday 12:30 pm
– 2:30 pm

Division Chair: Josh Byrnes

Email: byrnejos@niacc.edu

Phone: 641.422.4202

Instructor contact info:

Instructor: Kevin Losee

Email: loseekey@niacc.edu

Phone: 641.422.4371

Office location: MT 146

Office hours: 6:30 – 7:25 am Daily,
Afternoons by appointment

PREREQUISITE: Machinist Math I

Course Description: Covers practical vocational and technical applications of mathematical concepts necessary to excel in the machine, tool and die, and tool design industry. Topics are reinforced with realistic industry related examples, illustrations and actual applications. This is the second semester of a two semester math for General Machinist / Tool & Die Students.

Learning Materials:

1. *Mathematics for Machine Technology* 6th Edition by Smith & Peterson
2. Machinist Pro Calculator

Units of Instruction

Section 1 Fundamentals of Plane Geometry

1. Lines and Angular Measure
2. Protractors – Simple Semicircular and Vernier
3. Types of Angles and Angular Geometric Principles
4. Introduction to Triangles
5. Geometric Principles for Triangles and Other Common Polygons

6. Introduction to Circles
7. Arcs and Angles of Circles, Tangent Circles
8. Fundamental Geometric Construction

Section 2 Geometric Figures: Areas and Volumes

9. Areas of Rectangles, Parallelograms, and Trapezoids
10. Areas of Triangles
11. Areas of Circles, Sectors, and Segments
12. Volumes of Prisms
13. Volumes of Pyramids and Cones
14. Volumes of Spheres and Composite Solid Figures

Section 3 Trigonometry

15. Introduction to Trigonometric Functions
16. Analysis of Trigonometric Functions
17. Basic Calculations of Angles and Sines of Right Triangles
18. Simple Practical Machine Applications
19. Complex Practical Machine applications
20. The Cartesian Coordinate System
21. Oblique Triangles: Law of Sines and Law of Cosines

Section 4 Compound Angles

22. Introduction to Compound Angles
23. Drilling and Boring Compound – Angular Holes: Computing Angles of Rotation and Tilt Using Given Lengths
24. Drilling and Boring Compound – Angular Holes: Computing Angles of Rotation and Tilt Using Given Angles
25. Machining Compound – Angular Surfaces: Computing Angles of Rotation and Tilt
26. Computing Compound Angles on Cutting and Forming Tools

Section 5 Computer Numerical Control (CNC)

27. Introduction to Computer Numerical Control (CNC)
28. Control Systems, Absolute Positioning, Incremental Position
29. Location of Points: Polar Coordinate System
30. Binary Numeration System
31. BCD (Binary Coded Decimal) Numeration System

Grading:

The purpose of evaluation is to determine if the student has met the course objectives

The final grade will be determined by assessing the student's performance on attendance, homework, quizzes and tests. A straight total points of all work.

Grades will be awarded on the basis of the following scale:

95% to 100% = A	90% to 94% = A-
87% to 89% = B+	83% to 86% = B
77% to 79% = C+	73% to 76% = C
67% to 69% = D+	63% to 66% = D
Below 60% = Failure	60% to 62% = D-

Attendance and Tardiness Policy:

If a student must miss a class he / she will call the instructor at 1-641-422-4371, or toll free at 1-888-GO-NIACC ext.4371 or email him at loseekv@niacc.edu **BEFORE** missing that class in order to be able to make up any missed work, quizzes or tests. Leave a message if the instructor is not available.

It is the student's responsibility to obtain materials from missed classes.

After any three (3) absences, I will need to talk with Josh Byrnes, Industrial Division Head regarding attendance.

After 5 absences, the best grade that will be given is a "C" – excused or unexcused

The time clock is the device used to keep attendance. If a student forgets to log in or out, the student is responsible to get in touch with the instructor to get it amended. The time clock if used correctly can be used for documentation for any apprenticeships so it is to your advantage to use this feature to the best of your ability.

Late Work Policy:

All work is due as specified by the Instructor, anything late will have a deduction of 10% for one (1) day, 20% for two (2) days late, 50% for anything later than two (2) days.

College Policies:

If you have questions regarding issues such as grade appeals, grievance policies, and academic probation, please refer to the NIACC Student Handbook, which can be accessed at <http://www.niacc.edu/student-life/>.

NONDISCRIMINATION POLICY

It is the policy of North Iowa Area Community College to not discriminate on the basis of age, color, creed, disability, gender identity, genetic information, marital status, national origin, race, religion, sex (including pregnancy), sexual orientation, or veteran's status in its programs, activities, or employment practices as required by the Iowa Code sections 216.9 and 256.10(2), Titles VI and VII of the Civil Rights Act of 1964 (42 U.S.C. § 2000d and 2000e), the Equal Pay Act of 1973 (29 U.S.C. § 206, et seq.), Title IX (Educational Amendments, 20 U.S.C. §§ 1681 – 1688), Section 504

(Rehabilitation Act of 1973, 29 U.S.C. § 794), and the Americans with Disabilities Act (42 U.S.C. § 12101, et seq.).

Individuals having questions or complaints related to compliance with this policy should contact Shelly Schmit, EEO/AA Officer, 500 College Drive, Mason City, Iowa 50401, or via telephone at 641-422-4211. Inquiries may also be directed to the Director of the Office for Civil Rights, U.S. Department of Education, Citigroup Center, 500 West Madison, Suite 1475, Chicago, Illinois 60661, phone: 312-730-1560, fax: 312-730-1576.

DISABILITY SERVICES

North Iowa Area Community College strives to provide an accessible environment for students, faculty, and staff. A student needing accommodations should register with NIACC Disability Services and speak to Lisa Vance, the Disability Services Counselor, in the Student Access Office, AB106. For additional information, contact us at 1-888-466-4222, Ext. 4413, and ask for a brochure regarding Disability Services or to request a meeting with the Disability Services Counselor. You may also contact Lisa Vance directly at 641-422-4296 or vancelis@niacc.edu. Our website is <http://www.niacc.edu/student-life/disability-services/>.

If you have concerns regarding equal access to NIACC's services, programs, and activities you may contact NIACC Disability Services or learn more about filing a grievance at <http://www.niacc.edu/student-life/disability-services/policies-procedures/grievance-procedure/>.

A Disability Services Student Handbook can be found on our website at <http://www.niacc.edu/student-life/disability-services/disability-services-student-handbook/> or can be provided in hard copy (or an alternate format), upon request, and lists contact information for NIACC's ADA Coordinator and ADA Compliance Officer, along with other helpful information.

INCLEMENT WEATHER

NIACCAAlerts is a free service that alerts you immediately when a decision is made to close campus or delay classes due to weather conditions. This is your best and most accurate means of communication. Sign up here: <http://www.niacc.edu/about/campus-safety/niaccalerts/>

Cancellation or Delay of Classes: The decision to cancel, delay, or dismiss classes early will be made by the NIACC President (or designee). In these cases, the message will go FIRST on NIACCAAlerts, then to all area media by 6:00 a.m. Sometimes, due to staff availability or changing weather conditions, there may be a delay in making announcements.

All announcements will be provided to local media and posted on the Official NIACC Facebook and Twitter pages.

Community Education Centers and Buena Vista University: The NIACC Education Centers and BVU will follow the same announcement as on-campus, unless specified differently.

On-Campus Evening Classes: Any decision regarding on-campus evening classes (those starting after 6:00 p.m.) shall be made as early as possible. NIACCAAlerts will be used, as well as announcements on area media.

Off-Campus Evening Classes: Decisions regarding off-campus attendance centers are local decisions that are made by the local K-12 superintendents.

Special Events and Auditorium Events: Such events will not be included in the general announcement issued by the College, unless specified. Sponsoring organizations will be responsible for announcements of cancellations. EXCEPTION: If it is announced that the campus is closed, all activities are canceled.

All decisions on driving are left up to the student and will not be decided by the instructor.

Disclaimer Statement:

I reserve the right to alter this course's syllabus, policies, grading scale, texts, and calendar as needed at any time during the semester. I will alert you to any changes.

Academic Integrity Policy:

According the Student Conduct Code, (see the NIACC Student Handbook, found at <http://www.niacc.edu/student-life/>) academic dishonesty, including but not limited to:

- cheating
- plagiarism
- knowingly furnishing false information to the college
- forgery
- alteration or misuse of college documents or records

shall be subject to disciplinary procedures.

Class Recording and Social Media Policies:

It is not permissible to record or photograph any part of this class, the instructor or other students in the class or to upload them to any website including Facebook, YouTube or similar sites, unless prior permission from the instructor and the students involved.

Academic Resources:

While some academic resources may be available Independent Student Learning Center, machining specific instruction is probably best by contacting either myself or Randy Bonde.

Technical Support:

NIACC's Helpdesk can help with technical problems related to NIACC passwords, logging in to lab computers, MyNIACC, E-mail, ANGEL (online course management system), NIACC wireless, WebAdvisor, lab computers, office computers for staff, software issues, and more. NIACC Technology Services does not repair nor support personal computers. For many problems you may get the fastest results if you call our toll-free number below (24 hours – seven days per week).

On campus: 641-422-4357 Toll free: 866-614-5020 helpdesk@niacc.edu

<http://www.niacc.edu/student-life/technology-services/help-desk/>

Classroom Policies:

All safety glasses will be have clear lens and will conform to ANSI Z87.1 standards and be worn within the lab at all times. This means if you are passing through lab, you must wear safety glasses.

There are to be no active cell phones in the classroom or lab.