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Course Outline for NMAT 265

MATH JAM FOR BSTEM PREPARATION

Effective: Fall 2019

I. CATALOG DESCRIPTION:
NMAT 265 — Noncredit

Math Jam for BSTEM Prep is for students preparing for math courses in College Algebra, Trigonometry, Business Calculus and review prior to Calculus I. Math Jam is a noncredit program designed to help students prepare for their upcoming STEM focused math class at a community college. Embedded are essential study and life skills to develop each student holistically, including career development. Students will be learning pre-transfer level material with the goal of preparing them to be successful in their upcoming class. It is strongly recommended that students taking this course are enrolled in a community college math course.

Grading Methods:
Pass/No Pass

Discipline:
- Mathematics-Basic Skills: Noncredit

Noncredit Category
C - Elementary and Secondary Basic Skills

	MIN	MAX
Total Noncredit Hours:	30.00	60.00

II. PREREQUISITE AND/OR ADVISORY SKILLS:

III. MEASURABLE OBJECTIVES:

Upon completion of this course, the student should be able to:

A. Formulate short-term and long-term learning objectives for the course, based on their academic goal(s), including preparation for their upcoming community college math course.
B. Identify his/her individual areas of understanding and weakness in STEM math concepts
C. Apply mathematical concepts at a higher level
D. Demonstrate the appropriate skills necessary to become a more productive, successful, and independent learner;
E. Apply study skills and life skills that will improve the student's likelihood of succeeding in their academic and career goals, such as identifying his/her individual growth mindset, brain research, and learn personal time management, study skills, test taking and math anxiety strategies, etc.;

IV. CONTENT:

A. Students will identify their academic goal.
   1. Students will discuss their goal of preparing for their upcoming community college math course with an instructor and/or tutor.
   2. Students will declare their goal by filling out an intent form and given personalized STEM math objectives to focus on based on their goal.
B. Students will complete rigorous pre- and post-diagnostic exams.
   1. Results from pre-diagnostic exam will be used to identify his/her individual areas of understanding and weakness in STEM math concepts.
   2. Students will discuss the results with an instructor and/or tutor and create a personalized learning plan.
C. Students will read, watch videos, attend workshops and study STEM math material based on their personalized learning plan.
D. Students will work through STEM math problems.
E. Students will learn the appropriate skills necessary to become more productive, successful and independent learners.
   1. Students will participate in Growth Mindset and learning skill discussions.
   2. Students will learn about free resources available on campus and on the internet to enhance their learning of mathematics.
   3. Students will actively participate in the course by practicing, interpreting, restating, and organizing material independently and under the supervision of instructors and/or tutors.
F. Students will participate in classroom discussions and/or Smart Shops around such topics as Growth Mindset, Brain Research, Financial Aid, Time Management skills, Test Taking Strategies, and dealing with Math Anxiety.

V. METHODS OF INSTRUCTION:

A. **Classroom Activity** - such as instructor and/or tutor led discussions, workshops, etc.
B. **Guest Lecturers** - such as workshops led by content experts around the campus on such topics as Growth Mindset, Brain Research, Time Management, Test Taking Skills, Math Anxiety, Career Development, etc.
C. **Individualized Instruction** - such personalized instruction provided to the student by the instructor and/or tutor
D. **Audio-visual Activity** - such as watching videos, reading multi-media textbook, working problems out in steps, etc.

VI. TYPICAL ASSIGNMENTS:

A. In Class

1. Complete a Math Jam Pre- and Post-Survey, used to analyze student needs and effectiveness of the program.
2. Identify individual goal for the course by completing the Participant Goal Sheet. For most participants, their goal is to prepare for their upcoming community college course.
3. Complete a rigorous diagnostic pre- and post-test that will be used to personalize the learning for Math Jam.
4. Customize Study Plan of the math content based on the diagnostic pre-test and the individual goals for the course.
5. Work independently and in collaboration with other students, supported by the instructor and/or tutors to master the STEM math concepts.
6. Students will read, watch videos, attend workshops and study STEM math material based on their personalized learning plan.

B. Smart Shops

1. Classroom and lunchtime discussions around such topics as Growth Mindset, Brain Research, Financial Aid, Time Management skills, Test Taking Strategies, Career Development, and dealing with Math Anxiety.

C. Homework - students will be encouraged to continue work outside of class each day towards the following:

1. Mastery of STEM math concepts
2. Developing study and life skills that will improve the student's likelihood of succeeding in their academic and career goals.

VII. EVALUATION:

Methods/Frequency

A. Exams/Tests
Students will take a pre- and post- test.
B. Quizzes
Students will monitor their progress through their personalized plan under the supervision of instructors and/or tutors by taking daily quizzes
C. Class Work
Attendance will be recorded hourly
D. Home Work
Students will monitor their progress through their personalized plan under the supervision of instructors and/or tutors by completing daily homework

VIII. TYPICAL TEXTS:

1. Martin-Gay, Elayn. *Beginning and Intermediate Algebra.* 6th ed., Pearson, 2016.
2. Rockswold, Gary, and Terry Krieger. *Beginning and Intermediate Algebra with Applications and Visualization.* 4th ed., Pearson, 2018.
3. Miller, Julie, Molly O'Neill, and Nancy Hyde. *Beginning and Intermediate Algebra.* 5th ed., McGraw-Hill, 2018.
4. Handouts and materials provided by instructors and/or guest lecturers on appropriate STEM math concepts, Growth Mindset, Brain Research, study skills, time management, Career Development, and/or test and math anxiety.

IX. OTHER MATERIALS REQUIRED OF STUDENTS: