Course Name: Intro to Contemporary Mathematics  
Course Number: MTH 105  
Credits: 3  
Instructor name: Charisse Hake  
Instructor email: hakec@math.oregonstate.edu  
Terms Offered: F, W, S, Su

Catalog Course Description  
Elementary linear programming, combinatorics, descriptive statistics, elementary probability, exponential growth and decay, examples of major mathematical ideas and models. (Bacc Core Course) PREREQs: MTH 095 or MTH 103 with C- or better, or ALEKS math placement test: 46%, or math placement test: 17, or instructor permission.

Course Goals and Focus  
This class is designed with two general ideas in mind:  
1) There are certain mathematical concepts that are important for everyone to know and understand in order to function in daily life (“math literacy”).  
2) There are topics in math that, even for those who do not consider themselves to be “math people,” might find are fun and/or interesting.

Course Credits  
This course combines approximately 90 hours of instruction, online activities, and assignments for 3 credits.

Required Learning Resources  
- *Thinking Mathematically* by Robert Blitzer (2015, 6th edition) with MyMathLab online access code  
- Scientific or graphing calculator

Course Content  
1. Examples of major mathematical ideas and models  
2. Problem solving  
3. Consumer math  
4. Elementary probability  
5. Descriptive statistics  
6. Inferential statistics  
7. Graph theory

Selected portions of the text that will be covered:  
Chapter 1: 1.3  
Chapter 8: 8.1, 8.2, 8.3, 8.4, 8.6, 8.7, 8.8  
Chapter 11: 11.1, 11.2, 11.3, 11.4, 11.5, 11.6, 11.7  
Chapter 12: 12.1, 12.2, 12.3, 12.4, 12.5  
Chapter 14: 14.1, 14.2

This course is offered through Oregon State University Extended Campus. For more information, contact:  
Web: ecampus.oregonstate.edu  
Email: ecampus@oregonstate.edu  
Tel: 800-667-1465
Measurable Student Learning Outcomes
A successful student in MTH 105 will be able to:
1. Apply Polya’s four-step process to solve a variety of math problems.
2. Correctly apply formulas to calculate earned interest, loan payments, and other relevant financial questions that arise in daily life.
3. Correctly apply counting formulas to calculate the number of outcomes in an event or sample space.
4. Calculate probabilities of uncertain events.
5. Organize data into appropriate graphical forms.
6. Read and interpret data represented in a variety of graphical forms, including explaining incorrect representations of data.
7. Calculate and interpret some statistical measures, including mean, median, mode, variance and standard deviation.
8. Correctly apply formulas and use a standard normal distribution table to calculate probabilities of data that is normally distributed.
9. Discuss how the mathematics learned in this course can be used to model situations found in work and daily life.
10. Create and interpret graphs that model real life situations.
11. Determine when a graph contains an Euler path or circuit and find such paths or circuits to solve applied problems.

Successful completion of the Baccalaureate Core Mathematics category is one of OSU’s First Year Skills requirements. This course fulfills the Baccalaureate Core requirement for the Skills category for Mathematics. It does this by engaging students in applying mathematical reasoning and modeling to situations from everyday life.

Baccalaureate Core Student Learning Outcomes
Students in Mathematics courses shall:
1. Identify situations that can be modeled mathematically.
2. Calculate and/or estimate the relevant variables and relations in a mathematical setting.
3. Critique the applicability of a mathematical approach or the validity of a mathematical conclusion.

The outcomes will be integrated into the lectures, homework assignments, and discussion assignments. They will be assessed through online homework assignments, quizzes, and exams.

Communication
Please post all course-related questions in the Q&A Discussion Forum so that the whole class may benefit from our conversation. For matters of a personal nature, please email your instructor instead. Your instructor checks the discussion board, email, and Canvas inbox messages throughout the day, Monday through Friday. The instructor will strive to reply to posts and emails within 24 hours (excluding weekends and university holidays), and will strive to return your assignments and grades for course activities to you within five days of the due date.

Technical Assistance
If you experience computer difficulties, need help downloading a browser or plug-in, assistance logging into the course, or if you experience any errors or problems while in your online course, contact the OSU Help Desk for assistance. You can call (541) 737-3474, email osuhelpdesk@oregonstate.edu or visit the OSU Computer Helpdesk online.

Note to prospective students: Please check with the OSU Bookstore for up-to-date information for the term you enroll (OSU Bookstore Website or 800-595-0357). If you purchase course materials from other sources, be very careful to obtain the correct ISBN.
Canvas
This course will be delivered via Canvas where you will interact with your classmates and with your instructor. Within the course Canvas site you will access the learning materials, such as the syllabus, class discussions, lecture videos, assignments, and quizzes. To preview how an online course works, visit the Ecampus Course Demo. For technical assistance, please visit Ecampus Technical Help.

Evaluation of Student Performance
Your grade and measurement of your progress on the course outcomes will be based on weekly online homework, weekly discussion assignments, along with a midterm exam and final exam.

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<thead>
<tr>
<th>Activity</th>
<th>Points</th>
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<tbody>
<tr>
<td>Midterm Exam</td>
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<td>Final Exam</td>
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<td>Homework Quizzes</td>
<td>80</td>
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<td>Vocabulary and Concept Check Quizzes (2 @ 5 points each)</td>
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<tr>
<td>Introduction and Wrap-Up Discussions (5 points each)</td>
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<td>Problem-Solving Discussions</td>
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<td>Exploration Discussions (2 @ 5 points each)</td>
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<td><strong>Course Total</strong></td>
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Tentative Grading Scale:  A 358-400   B 318-357   C 278-317   D 238-277   F Below 238

Course Schedule

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<tr>
<th>Week</th>
<th>Topics</th>
<th>Reading Assignments</th>
<th>Learning Activities</th>
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<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>Sections 1.3, 8.2, 8.3</td>
<td>• Intro discussion</td>
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<td>Problem Solving</td>
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<td>• Lecture videos and notetaking</td>
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<td>Consumer Math</td>
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<td>• Online homework quizzes:</td>
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<td>• Exploration Discussion</td>
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<td>2</td>
<td>Consumer Math</td>
<td>Sections 8.4, 8.6, 8.7</td>
<td>• Lecture videos and notetaking</td>
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<td>• Problem Solving Discussion 2</td>
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<td>• Exploration Discussion</td>
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<td>3</td>
<td>Consumer Math</td>
<td>Sections 8.8, 11.1, 11.2</td>
<td>• Lecture videos and notetaking</td>
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<td>Counting Principles</td>
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<td>• Online homework quizzes:</td>
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<td>• Problem Solving Discussion 3</td>
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<td>• Exploration Discussion</td>
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<tr>
<td>Week</td>
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| 4    | Counting Principles | Sections 11.3, 11.4, 11.5 | • Lecture videos and notetaking  
• Online homework quizzes:  
  o Combinations  
  o Fundamentals of Probability  
  o Probability with Counting  
• Problem Solving Discussion 4  
• Exploration Discussion |
| 5    | Reviewing and mastering learning outcomes for midterm exam | | • Exam review problems and videos  
• Concept & Vocabulary Check 1  
• Problem Solving Discussion 5 |
| 6    | Probability  
Descriptive statistics | Sections 11.6, 11.7, 12.1 | • Proctored Midterm Exam  
• Lecture videos and notetaking  
• Online homework quizzes:  
  o Probability with Not and Or  
  o Probability with And  
  o Sampling, Frequency Distributions, and Graphs  
• Problem Solving Discussion 6  
• Exploration Discussion |
| 7    | Descriptive statistics | Sections 12.2, 12.3 | • Lecture videos and notetaking  
• Online homework quizzes:  
  o Mean and Media  
  o Measures of Central Tendency  
  o Measures of Dispersion  
• Problem Solving Discussion 7  
• Exploration Discussion |
| 8    | Inferential statistics | Sections 12.4, 12.5 | • Lecture videos and notetaking  
• Online homework quizzes:  
  o Normal Distribution  
  o Z-score and Percentile  
  o Problem Solving with Normal Distribution  
• Problem Solving Discussion 8  
• Exploration Discussion |
| 9    | Graph theory | Sections 14.1, 14.2 | • Lecture videos and notetaking  
• Online homework quizzes:  
  o Modeling Relationships Using Graphs  
  o Euler Paths and Euler Circuits  
• Problem Solving Discussion 9  
• Exploration Discussion |
| 10   | Reviewing and mastering learning outcomes for final exam | | • Exam review problems and videos  
• Concept & Vocabulary Check 2  
• Problem Solving Discussion 10  
• Wrap Up Discussion |
| Finals | | | • Final Exam |
**Course Policies**

**Discussion Participation**
Students are expected to participate in all graded discussions by the deadlines. While there is great flexibility in online courses, this is not a self-paced course.

**Problem Solving Discussions**: You will need to participate in our weekly problem solving discussions on at least two different days each week. Each problem solving discussion has two deadlines. The first deadline is for your assigned problem solving post. The second deadline is for your response post to another student’s problem solving post. Deadlines, detailed requirements for, and examples of, full credit graded problem solving discussion posts will be given in Canvas.

**Exploration Discussions**: Students must complete 1 of the exploration discussions from weeks 1 through 4 and 1 of the exploration discussions from weeks 6 through 9 in order to earn the exploration discussion credit for the term. There are a variety of exploration discussions from which to choose.

**Online Homework and Quizzes**
Homework quizzes and concept and vocabulary check quizzes are completed in Canvas inside the My Lab and Mastering menu. All of these assignments are designed in a learning outcome mastery format, in which the system will guide you through practice and learning problems until you demonstrate mastery of each outcome contained in that assignment and are ready to take the graded quiz. Each quiz can be completed an unlimited number of times until the assignment deadline, so that you can work toward full mastery of the outcomes and a score which reflects that mastery. Registration for the online system must be done from within Canvas. Detailed registration directions will be posted in the Start Here module in Canvas.

**Proctored Exams**
This course requires that you take exams under the supervision of an approved proctor. Proctoring guidelines and registration for proctored exams are available online through the Ecampus testing and proctoring website. It is important to submit your proctoring request as early as possible to avoid delays.

**Makeup Exams**
Makeup exams will be given only for missed exams excused in advance by the instructor. Excused absences will not be given for airline reservations or other travel, routine illness (colds, flu, stomach aches), or other common ailments. Excused absences will generally not be given after the absence has occurred, except under very unusual circumstances.

**Exam Time Limits**
Exams in this class are timed at 110 minutes each; if you exceed the time limit on an exam, you will be assessed a penalty of 10% for every five minute interval beyond the time limit.

**Incompletes**
Incomplete (I) grades will be granted only in emergency cases (usually only for a death in the family, major illness or injury, or birth of your child), and if the student has already completed all course work except the final exam and has a passing average on that work (has earned at least 70% of all points before the final exam). If you are having any difficulty that might prevent you completing the coursework, please don’t wait until the end of the term; let me know right away.
Guidelines for a Productive and Effective Online Classroom

Students are expected to conduct themselves in the course (e.g., on discussion boards, email) in compliance with the university's regulations regarding civility. Civility is an essential ingredient for academic discourse. All communications for this course should be conducted constructively, civilly, and respectfully. Differences in beliefs, opinions, and approaches are to be expected. In all you say and do for this course, be professional. Please bring any communications you believe to be in violation of this class policy to the attention of your instructor.

Active interaction with peers and your instructor is essential to success in this online course, paying particular attention to the following:

- Unless indicated otherwise, please complete the readings and view other instructional materials for each week before participating in the discussion board.
- Read your posts carefully before submitting them.
- Be respectful of others and their opinions, valuing diversity in backgrounds, abilities, and experiences.
- Challenging the ideas held by others is an integral aspect of critical thinking and the academic process. Please word your responses carefully, and recognize that others are expected to challenge your ideas. A positive atmosphere of healthy debate is encouraged.

Statement Regarding Students with Disabilities

Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at OSU Disability Access Services. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

Accessibility of Course Materials

All materials used in this course are accessible. If you require accommodations please contact Disability Access Services (DAS).

Additionally, Canvas, the learning management system through which this course is offered, provides a vendor statement certifying how the platform is accessible to students with disabilities.

Expectations for Student Conduct

Student conduct is governed by the university’s policies, as explained in the Student Conduct Code.

Academic Integrity

Students are expected to comply with all regulations pertaining to academic honesty. For further information, visit Student Conduct and Community Standards, or contact the office of Student Conduct and Mediation at 541-737-3656.

OAR 576-015-0020 (2) Academic or Scholarly Dishonesty:

a) Academic or Scholarly Dishonesty is defined as an act of deception in which a Student seeks to claim credit for the work or effort of another person, or uses unauthorized materials or fabricated information in any academic work or research, either through the Student's own efforts or the efforts of another.

b) It includes:

   i) CHEATING - use or attempted use of unauthorized materials, information or study aids, or an act of deceit by which a Student attempts to misrepresent mastery of academic effort or information. This includes but is not limited to unauthorized copying or collaboration on a test or assignment, using
prohibited materials and texts, any misuse of an electronic device, or using any deceptive means to gain academic credit.

ii) FABRICATION - falsification or invention of any information including but not limited to falsifying research, inventing or exaggerating data, or listing incorrect or fictitious references.

iii) ASSISTING - helping another commit an act of academic dishonesty. This includes but is not limited to paying or bribing someone to acquire a test or assignment, changing someone’s grades or academic records, taking a test/doing an assignment for someone else by any means, including misuse of an electronic device. It is a violation of Oregon state law to create and offer to sell part or all of an educational assignment to another person (ORS 165.114).

iv) TAMPERING - altering or interfering with evaluation instruments or documents.

v) PLAGIARISM - representing the words or ideas of another person or presenting someone else's words, ideas, artistry or data as one's own, or using one's own previously submitted work. Plagiarism includes but is not limited to copying another person's work (including unpublished material) without appropriate referencing, presenting someone else's opinions and theories as one's own, or working jointly on a project and then submitting it as one's own.

c) Academic Dishonesty cases are handled initially by the academic units, following the process outlined in the University's Academic Dishonesty Report Form, and will also be referred to SCCS for action under these rules.

Conduct in the Online Classroom
Students are expected to conduct themselves in the course (e.g., on discussion boards, email postings) in compliance with the university's regulations regarding civility.

Tutoring
NetTutor is a leading provider of online tutoring and learner support services fully staffed by experienced, trained and monitored tutors. Students connect to live tutors from any computer that has Internet access. NetTutor provides a virtual whiteboard that allows tutors and students to work on problems in a real time environment. They also have an online writing lab where tutors critique and return essays within 24 to 48 hours. Access NetTutor from within your Canvas class by clicking on the Tools button in your course menu.

OSU Student Evaluation of Teaching
Course evaluation results are extremely important and help me improve this course and the learning experience of future students. Results from the 19 multiple choice questions are tabulated anonymously and go directly to instructors and department heads. Student comments on the open-ended questions are compiled and confidentially forwarded to each instructor, per OSU procedures. The online Student Evaluation of Teaching form will be available toward the end of each term, and you will be sent instructions via ONID by the Office of Academic Programs, Assessment, and Accreditation. You will log in to “Student Online Services” to respond to the online questionnaire. The results on the form are anonymous and are not tabulated until after grades are posted.