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| http://net4.valenciacollege.edu/cob/images/valenciaLogo.gif |   | **Course OutlineMGF 1107Mathematics for the Liberal Arts** |

**General Course Information**

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| **Common Course Number:** | MGF1107 |
| **Course Title:** | Mathematics for the Liberal Arts |
| **Prerequisite(s):** | Minimum grade of C in MAT 1033C, or MAC 1105, or STA 2023 or appropriate score on an approved assessment |
| **Contact Hour Breakdown:** | **CR** 3     **CLASS** 3     **LAB** 0 |
| **Discipline:** | Mathematics |
| **Catalog Description:** | This course covers topics chosen from problem solving, numeration and mathematical systems, financial mathematics, voting techniques and apportionment, chaos theory, graph theory, knot theory, tilings and polyhedra, game theory, number theory, connections to other disciplines, and other special topics in mathematics. Gordon Rule course. Minimum grade of C required if course is used to satisfy Gordon Rule and general education requirements. |

**Major Topics/ Concepts/ Skills/ Issues*** MGF 1107 topics may include, but are not limited to, the ones found in the catalogue description above. Topics in MGF 1106 may not be done in MGF 1107 (see MGF 1106 Course Outline).

**Major Learning Outcomes with Evidence, Core Competencies and Indicators**

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| **The student will learn that mathematics is an evolving discipline with new areas of study as well as new results and applications of older ideas. (Evidence of learning will vary based on topics included in the course.)** |
|     **Corresponding Evidence of Learning** |
|  Student will be able to If Number Theory is a topic in the course, then evidence of learning could be having the student create a check digit for an identification number.  Student will be able to If Number Theory is a topic in the course, then evidence of learning could be having the student develop codes/ciphers.  Student will be able to If Graph Theory is a topic in the course, then evidence of learning could be having the student create optimal networks in a weighted graph.  |
|     **Core Competency: Think** |
| **Indicators** | **Assessments** |
|  employ the facts, formulas, procedures of the discipline  revise conclusions consistent with new observations, interpretations, or reasons  |  Classroom assessment technique  Locally developed exam/objective  Problem-solving quiz  Project  |
|     **Core Competency: Communicate** |
| **Indicators** | **Assessments** |
|  employ methods of communication appropriate to your audience and purpose  |  Locally developed exam/objective  Problem-solving quiz  Project  |
| **The student will learn to implement some of the fundamental methods of each topic in various areas of mathematics. (Evidence of learning will vary based on topics included in the course.)** |
|     **Corresponding Evidence of Learning** |
|  Student will be able to If Graph Theory is a topic in the course, then evidence of learning could be having the student apply algorithms such as the "Nearest Neighbor" and "Greedy" to find an approximate solution to the Traveling Salesman Problem in a given weighted graph.  Student will be able to If Tilings and Polyhedra is a topic in the course, then evidence of learning could be having the student use Euler's formula for polyhedra to solve problems about the number of edges, faces, and vertices of a polyhedron.  |
|     **Core Competency: Think** |
| **Indicators** | **Assessments** |
|  employ the facts, formulas, procedures of the discipline  revise conclusions consistent with new observations, interpretations, or reasons  |  Classroom assessment technique  Locally developed exam/objective  Problem-solving quiz  Project  |
|     **Core Competency: Communicate** |
| **Indicators** | **Assessments** |
|  employ methods of communication appropriate to your audience and purpose  |  Locally developed exam/objective  Problem-solving quiz  Project  |
| **The student will learn how a variety of problems in society can be described mathematically, and that different methods can lead to different answers to a problem. (Evidence of learning will vary based on topics included in the course.)** |
|     **Corresponding Evidence of Learning** |
|  Student will be able to If Voting Methods is a topic in the course, then evidence of learning could be having the student, after being provided a preference ranking table based on ballots from an election, determine the outcomes of the election with different voting methods.  Student will be able to If Financial Mathematics is a topic in the course, then evidence of learning could be having the student demonstrate an understanding of the effects of compound interest in savings and loans problems.  |
|     **Core Competency: Think** |
| **Indicators** | **Assessments** |
|  employ the facts, formulas, procedures of the discipline  revise conclusions consistent with new observations, interpretations, or reasons  |  Classroom assessment technique  Locally developed exam/objective  Problem-solving quiz  Project  |
|     **Core Competency: Communicate** |
| **Indicators** | **Assessments** |
|  employ methods of communication appropriate to your audience and purpose  |  Locally developed exam/objective  Problem-solving quiz  Project  |

**Addenda*** [MGF1107Syllabus201110](http://net4.valenciacollege.edu/COB/uploads/MGF1107Syllabus201110.doc)

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