## Recommended Course Identification:

<table>
<thead>
<tr>
<th>PREFIX</th>
<th>MAT</th>
<th>COURSE NUMBER</th>
<th>LAB CODE (L or C)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>6516</td>
<td></td>
</tr>
</tbody>
</table>

*(To obtain a course number, contact erudolph@fau.edu)*

**Effective Date**

(first term course will be offered)

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**Complete Course Title**

Problem Solving and Recreational Mathematics

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**Course Description, no more than 3 lines:**

Analysis and solution of mathematical problems of concrete and recreational nature.

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**PREREQUISITES**

- Modern Analysis (Maa4200) or permission by instructor

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**TEXTBOOK INFORMATION:**


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**CREDITS:**

3

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**GRADING (SELECT ONLY ONE GRADING OPTION):**

- Regular [x]
- Pass/Fail
- Satisfactory/Unsatisfactory

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**SUPPORTING MATERIALS**

- Syllabus—must include all details as shown in the UGPC Guidelines.
- Written Consent—required from all departments affected.

Go to: [http://graduate.fau.edu/gpc/](http://graduate.fau.edu/gpc/) to download this form and guidelines to fill out the form.
Email this form and syllabus to sfulks@fau.edu and eqirjo@fau.edu one week before the University Graduate Programs Committee meeting so that materials may be viewed on the UGPC website by committee members prior to the meeting.
MAT 6516 Problem Solving and Recreational Mathematics (3 credits)

Catalogue description: Analysis and solution of mathematical problems of concrete and recreational nature.

Course objectives: Students will
1. be exposed to some famous problems and their solutions,’
2. master some basic problem solving techniques, and
3. be able to solve problems up to the level of elementary mathematical analysis.

Prerequisites: Modern Analysis (MAA4200) or permission of instructor.
Corequisites: None.

Recommended Texts

Bibliography
4. One Hundred Great Problems in Mathematics, Dover reprint.

Syllabus (representative)
1. Problems in elementary number theory (1 week)
2. Mathematical games (1 week)
3. Solution of Diophantine equations (1 week)
4. Geometry Problems (1 week)
5. Interplay between number theory and geometry (2 weeks)
6. Summation of finite series (1 week)
7. Geometric constructions (1 week)
8. Dissection problems (1 week)
9. Prime numbers (1 week)
10. Permutations (1 week)
11. Maxima and minima without calculus (1 week)
12. Calculus problems (1 week)
13. Summation of infinite series (1 week)
14. Probability (1 week)
15. Selected famous historical problems (1 week)
    Total: 16 weeks

Method of Instruction: Lecture.
Assessment: Homework 40%/Journal 20%/ Tests 20%/Exam 20%
Grading Criteria: 92--100% A; 90--91% A-; 88-89% B+; 82—87% B; 80—81% B-;
78—79% C+; 70—77% C; 60—69% D; 0—59% F.

In compliance with the Americans with Disabilities Act (ADA), students who
require special accommodations due to a disability to properly execute
coursework must register with the Office for Students with Disabilities (OSD)
located in Boca Ration – SU 133 (561-297-388), in Davie – MOD 1 (954-226-1222),
in Jupiter – SU 117 (561-799-8585), or at the Treasure Coast – CO 128 (772-873-
3305), and follow all OSD procedures.

Students at Florida Atlantic University are expected to maintain the highest
ethical standards. Academic dishonesty, including cheating and plagiarism, is
considered a series breach of these ethical standards, because it interferes with
the University mission to provide a high quality education in which no student
enjoys an unfair advantage over any other. Academic dishonesty is also
destructive of the University community, which is grounded in a system of mutual
trust and places high value on personal integrity and individual responsibility.
Harsh penalties are associated with academic dishonesty. For more information,