Course: ENPM 808F – Reverse Software Engineering
Semester: Spring 2015
Day(s): Wed
Time: 7:00-9:40 PM
Location: JMP 2120
Instructor: Dr. Charles Song
Phone: (240) 487-2936
Email: csong@fc-md.umd.edu

Course Description

This course provides in-depth understanding of reverse software engineering concepts and hands-on training with reverse engineering tools, including disassembler, decompiler, and code analyzer. Students will become familiar with both low-level software and the x86 instruction set through binary reversing sessions. This course also provides insights into many subjects such as system security, source code analysis, software design, and program understanding that will be beneficial in a variety of fields.

Grading Policy: The final grade is calculated based on the weighted sum of the scores from the breakdown as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weightage</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Homework Assignment</td>
<td>40%</td>
</tr>
<tr>
<td>1 Midterm Exam</td>
<td>20%</td>
</tr>
<tr>
<td>1 Final Exam</td>
<td>25%</td>
</tr>
<tr>
<td>1 Student Presentation</td>
<td>10%</td>
</tr>
<tr>
<td>Class participation</td>
<td>5%</td>
</tr>
</tbody>
</table>

Prerequisites: Students must have prior programming experience, preferably with C/C++.

Required/Recommended Textbooks

No required textbook.

Recommended textbook:

A selection of papers and articles on relevant topics will be provided.

Course Outline

The following topics are planned, however changes may occur:

- Introduction
- Operating System
- Assembly Code
- Binary Reversing Tools
- Software Vulnerabilities
- Malware
- Anti-reversing
- Reversing Java Bytecode
- Dynamic Analysis
- Reversing Source Code
- Program Understanding