

## EGCO477 Penetration Testing and Prevention

**SO1. An ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science, and mathematics.**

**Passing criterion  $\geq 70\%$**

PI 1-3 Demonstrates knowledge of translation of theory to real world applications and/or engineering practices

PI 1-5 Demonstrates the ability to identify the problems

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**Project 2:**      นำเสนอโครงการที่เป็นช่องโหว่ในระบบ Web Server และ Web Application ที่พบระหว่างปี 2018-2020 และเสนอวิธีการป้องกันและแก้ไข [25 คะแนน]

Student No.	PI 1-1 (Marks)	PI 1-5 (Marks)	Pass( $\geq 17.5$ )
1	25	25	✓
2	25	25	✓
3	20	20	✓
4	25	25	✓
5	25	25	✓
6	25	25	✓
7	20	20	✓
8	25	25	✓
9	25	25	✓
10	25	25	✓
11	25	25	✓
12	25	25	✓
13	25	25	✓
14	25	25	✓
15	25	25	✓
16	20	20	✓
17	25	25	✓
18	20	20	✓
19	25	25	✓
20	25	25	✓
Number of Pass			20

PI 1-3 Attainability =  $20/20 = 100\%$  **Attainable**

PI 1-5 Attainability =  $20/20 = 100\%$  **Attainable**

**SO5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks and meet objective.**

**Passing criterion  $\geq 70\%$**

PI 5-1 Assign the appropriate tasks and establish plans to finish work and meet goals on time

PI 5-2 Create fair collaboration

**Project 1:** นำเสนอโครงการที่เป็นช่องโหว่ในระบบคอมพิวเตอร์ที่พบระหว่างปี 2018-2020 และเสนอวิธีการ  
ป้องกันและแก้ไข [25 คะแนน]

Student No.	PI 5-1 (Marks)	PI 5-2 (Marks)	Pass( $\geq 17.5$ )
1	25	25	✓
2	25	25	✓
3	25	25	✓
4	21	21	✓
5	25	25	✓
6	25	25	✓
7	25	25	✓
8	25	25	✓
9	21	21	✓
10	25	25	✓
11	25	25	✓
12	25	25	✓
13	25	25	✓
14	25	25	✓
15	19	19	✓
16	21	21	✓
17	25	25	✓
18	21	21	✓
19	25	25	✓
20	19	19	✓
Number of Pass			20

PI 5-1 Attainability =  $15/20 = 75\%$     Attainable

PI 5-2 Attainability =  $20/20 = 100\%$     Attainable

**SO6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.**

**Passing criterion  $\geq 70\%$**

PI 6-2 Determines data that are appropriate to collect and selects appropriate equipment, protocol

PI 6-3 Uses appropriate tools to analyze data and verifies and validates experimental results

**Exercise 1: SQL injection**

[10 คะแนน] ให้ นศ. ทำการทดสอบความปลอดภัยของ Web Server เพื่อค้นหาช่องโหว่ประเภท SQL injection

Student No.	PI 6-2 (Marks)	PI 6-3 (Marks)	Pass( $\geq 7$ )
1	0	0	✗
2	0	0	✗
3	0	0	✗
4	0	0	✗
5	10	10	✓
6	10	10	✓
7	7	7	✓
8	10	10	✓
9	9	9	✓
10	10	10	✓
11	7	7	✓
12	9	9	✓
13	9	9	✓
14	7	7	✓
15	7	7	✓
16	10	10	✓
17	8	8	✓
18	7	7	✓
19	7	7	✓
20	5	5	✗
Number of Pass			15

PI 6-2: Attainability =  $15/20 = 75\%$      Attainable

PI 6-3: Attainability =  $15/20 = 75\%$      Attainable

**Exercise 2: XSS**

[10 คะแนน] ให้ นศ. ทำการทดสอบความปลอดภัยของ Web Server เพื่อค้นหาช่องโหว่ประเภท XSS

Student No.	PI 6-2 (Marks)	PI 6-3 (Marks)	Pass(>=7)
1	0	0	✗
2	5	5	✗
3	9	9	✓
4	7.5	7.5	✓
5	10	10	✓
6	10	10	✓
7	7.5	7.5	✓
8	10	10	✓
9	10	10	✓
10	10	10	✓
11	7	7	✓
12	7.5	7.5	✓
13	5	5	✗
14	5	5	✗
15	5	5	✗
16	5	5	✗
17	7.5	7.5	✓
18	5	5	✗
19	5	5	✗
20	5	5	✗
Number of Pass			11

PI 6-2: Attainability =  $11/20 = 55\%$      Attainable

PI 6-3: Attainability =  $11/20 = 55\%$      Attainable

**SO7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.**

**Passing criterion  $\geq 70\%$**

PI 7-1 Able to find information relevant to problem solution without guidance

PI 7-2 Selects appropriate techniques and tools for a specific engineering task and compares results with results from alternative tools or techniques

### Final Exam

[30 คะแนน] ให้ นศ. ทำการทดสอบความปลอดภัยของ Web Server เพื่อค้นหาช่องโหว่และแสดงผลลัพธ์ของการทดสอบเจาะระบบเป้าหมายด้วยช่องโหว่ที่ตรวจพบ

Student No.	Score (30)	PI 7-1 ( $\geq 70\%$ )	PI 7-2 ( $\geq 70\%$ )
1	15	✗	✗
2	28	✓	✓
3	5	✗	✗
4	15	✗	✗
5	30	✓	✓
6	30	✓	✓
7	18	✗	✗
8	27	✓	✓
9	25	✓	✓
10	15	✗	✗
11	19	✗	✗
12	25	✓	✓
13	18	✗	✗
14	5	✗	✗
15	5	✗	✗
16	21	✓	✓
17	30	✓	✓
18	5	✗	✗
19	12	✗	✗
20	12	✗	✗
Number of Pass		36	35

PI 7-1: Attainability =  $8/20 = 40\%$  Not Attainable

PI 7-2: Attainability =  $8/20 = 40\%$  Not Attainable

**SO1 Conclusion**

PI	Attainability	Reason	Remedial Action	Action plan	Measurements
1-3	✓				
1-5	✓				

**SO5 Conclusion**

PI	Attainability	Reason	Remedial Action	Action plan	Measurements
5-1	✓				
5-2	✓				

**SO6 Conclusion**

PI	Attainability	Reason	Remedial Action	Action plan	Measurements
6-2	✓				
6-3	✓				

**SO7 Conclusion**

PI	Attainability	Reason	Remedial Action	Action plan	Measurements
7-1	✘	Exercises and Project were done as a group, so they can share knowledge. However, the final exam was done as individual exam. Some students might not concentrate enough.	Having more numbers of quiz and lab exam individually in the class before the final exam	Next academic year	Next academic year
7-2	✘	Exercises and Project were done as a group, so they can share knowledge. However, the final exam was done as individual exam. Some students might not concentrate enough.	Having more numbers of quiz and lab exam individually in the class before the final exam	Next academic year	Next academic year