בס"ד

שם הקורס: מערכות הפעלה

שם הפקולטה: מדעי הטבע

שם המחלקה: מדעי המחשב

מספר הקורס: *- 2-7029110

שם המרצה: **TBD-?**

מתכונת הקורס: הרצאה + תרגול

Objectives of the module: Provide the necessary theoretical and practical knowledge in major approaches used in various designs of operating systems.

The course provides an introduction to modern operating systems. Various aspects of operating systems are reviewed and discussed, including such basic concepts as processes, scheduling, synchronization, memory management, etc. The course emphasizes practical study of operating systems and provides students with the opportunity for hands-on work mostly on the LINUX operating system complementing the theoretical background.

1. Introduction: OS as an abstraction layer.
2. Processes and threads I
3. Processes and threads II
4. Interprocess communication
5. Scheduling I
6. Scheduling II
7. Synchronization I
8. Synchronization II
9. Synchronization III
10. Synchronization IV
11. Deadlocks
12. Memory management
13. Reserved for Optional (Advanced Memory-Management, Basics of File-Systems, Virtualization, Cloud Computing, etc.)

Assessment:
1. Exam/Project– 70%
2. Assignments – 30%

Students must have a passing grade in the exam (56 and higher) and the total assignments grade (56 and higher) to pass the course. The attendance duties to pass the course will be clarified later.

Work and assignments: students will receive 4-5 assignments (in pairs)..

Main book: Operating System Concepts, A. Silbetschatz, P. Galvin and G. Gagne. 8th edition, Addison Wesley, 2009.

Additional reading:

1. Modern Operating Systems, A. Tanenbaum Prentice-Hall, 3rd Edition, 2008.
2. The Linux Programming Interface: A Linux and UNIX System Programming Handbook, M. Kerrisk,
3. Synchronization Algorithms and Concurrent Programming, G. Taubenfeld, Prentice Hall, 2006.
5. Other materials will be provided during the course.