



# Course Book

1. Course name	Semiconductors
2. Lecturer in charge	Wala Dizayee
3. Department/ College	General Science /Basic Education
4. Contact	e-mail: <a href="mailto:wala.dizayee@su.edu.krd">wala.dizayee@su.edu.krd</a> Tel: (optional)
5. Time (in hours) per week	For example Theory: 3 Practical: 0
6. Office hours	
7. Course code	
8. Teacher's academic profile	<a href="https://academics.su.edu.krd/wala.dizayee">https://academics.su.edu.krd/wala.dizayee</a>
9. Keywords	Semiconductors,
<p><b>10. Course overview:</b></p> <ul style="list-style-type: none"> <li>- This course will introduce students to the foundations of Semiconductors, therefore the course is intended to cover some of the standard concepts, like; Bonds of materials, Type of Semiconductors according to their structure, Fermi energy .... etc.</li> <li>- Learn about the theory and applications of semiconductor concepts by using a simple and clear mathematic to explain the physics.</li> <li>- Help the student to gain experience in reading and scientific writing.</li> <li>-The course aims to introduce and explain the foundational concepts of semiconductor for students, which will help them to take up more advanced topics in later years.</li> </ul>	
<p><b>11. Course objective:</b></p> <ul style="list-style-type: none"> <li>- The course will provide an introduction of basic semiconductor concepts.</li> <li>- Consternate on a number of topics like; <b><u>semiconductor, Types, Properties, Classification of solid and mathematical equations</u></b> to explain the physical concepts.</li> <li>- Clarify the physical concepts through a range of examples and applications.</li> </ul>	

### **12. Student's obligation:**

- Students should attend in all lectures, either in hall or online.
- Participation in classroom discussions and solving practical examples related to the subjects.
- Home works and quiz.
- The students are required to do two mid-term exams and a final exam.

### **13. Forms of teaching**

- White board.
- Data Show power point presentation.
- Homework and problem solving in the class.
- Group activity & individual activity.
- Group assignments & individual assignments.

### **14. Assessment scheme**

- One mid-term exams and a final exam.
- Daily Activity (Group activity & individual activity).
- Attendance of students.
- Homework (Group assignments & individual assignments).
- Reports.
- Posters.

### **15. Student learning outcome:**

- The student will be familiar with the basic ideas to understand several concepts about **semiconductor, Types, Properties, Classification of solid and mathematical equations** and,...., etc.
- To gain experience about how to think scientifically and critically in seeking for new knowledge.

**16. Course Reading List and References:**

▪ Key references:

A- Useful references:

- 1- Introduction to solid state physics (Charles Kittel).
- 2- Elementary solid state physics principle and application (M.A Omer).
- 3- Solid state physics.
- 4- Electronic circuit analysis and design (Donald A-Neamens).
- 5- Semiconductor of devices fundamentals (Robert F.pierrel).
- 6- Principle of semiconductor Devices (B Van zeghloroeck)

**17. The Topics:**

Lecturer's name

- 1- Introduction :review on semiconductor historical and development industrial
- 2- Classification of solid by electrical conduction
- 3- Types of material
- 4- Type of semiconductor
- 5-Types of solid state by electrical conduction
- 6- Properties of these four types
- 7- Bonds of materials.
- 8- Electron in atom
- 9- Development of semiconductor field Semiconductor
- 10- Fermi energy
- 11- N-Type and P-Type semiconductors

**18. Practical Topics ( If there is any)**

**19. Examinations:**

Total :100%

Final exam: 60%

1<sup>st</sup> term: 40%

1<sup>st</sup> term: 40%



Midterm exams: 30%

Activates: 10% (Homework?? %, quizzes:?? % , Participation ?? %, poster?? %, presentation?? %, Group activity & individual activity?? % and ,,,,,,,,, )

**20. Extra notes:**

**21. Peer review:**

I read this course book it's very good and I signed on it.