4- Course Specification of: Energy Efficiency and Conservation Course Code (PME5313)

| | I. General Information Ab | out the | Course: | | | |
|-----|---|-----------|----------------|------------------|-------|--|
| 1. | Course Title: | Energy Et | fficiency and | d Conservation | | |
| 2. | Course Code and Number: | PME5313 | | | | |
| | Credit Hours: | | Credit | Hours | Tatal | |
| 3. | | Lecture | Practical | Seminar/Tutorial | Total | |
| | | 3 | - | - | 3 | |
| 4. | Study Level and Semester: | First Sem | ester | | | |
| 5. | Pre-requisites (if any): | - | | | | |
| 6. | Co-requisites (if any): | - | | | | |
| 7. | Program (s) in which the course is offered: | MSc. in E | Electrical Po | wer Engineering | | |
| 8. | Language of teaching the course: | English | | | | |
| 9. | Study System: | Courses & | & Thesis | | | |
| 10. | Prepared By: | Prof. Dr. | Eng. Omar l | H. Al-Sakaf | | |
| 11. | Reviewed by: | Dr. RAdw | van Al-Bout | higy | | |
| 12. | Date of Approval: | | | | | |

II. Course Description:

Efficiency and sustainability of energy systems are pre-requisites for sustainable development and the challenges to achieve this lie at the interface of technology innovation and human behavior. This course is designed to give students the skills to identify and understand energy efficiency and conservation methods used to reduce energy consumption in the built environment. Students will analyze power systems, residential and industrial facilities for opportunities to employ these energy saving measures. Students will become familiar with the use of energy monitoring and measuring equipment used for energy auditing. Students will also learn to calculate energy savings and determine environmental impacts of these energy saving methods. Topics include elements of energy conservation and management, energy conservation in power systems, energy-efficient technologies for green buildings and industrial processes, energy audit, techno-economic and environmental evaluation of energy efficiency measures and case studies.

III. Course Intended Learning Outcomes (CILOs):

Upon successful completion of **Energy Efficiency and Conservation** Course, the graduates will be able to:

- al Recognize that energy conservation in its various forms is the cornerstone of successful national energy strategy.
- a2 Understand the rationale for and the drivers behind the international trend that energy efficiency has become the first fuel to meet rising energy demand and the first tool to mitigate carbon emissions.
- b1 Formulate the parts of knowledge and analysis that are required to carry out projects in connection with administration and efficient use of energy in different sectors.
- b2 Develop new ideas to improve the administration, conservation and efficient use of energy.

- c1 Conduct energy audits to provide a "bench-mark" (Reference point) for managing energy and planning a more effective use of energy throughout the organization.
- c2 Evaluate the techno-economic feasibility of the energy conservation and energy efficiency techniques adopted.
- d1 Demonstrate analytical and problem-solving skills appropriate to the energy sector with focus on energy efficiency improvement and energy conservation.
- d2 Function effectively in diverse teams and in multi-disciplinary settings to disseminate the benefits of and opportunities for energy efficiency improvement and energy conservation.

| | IV. Alignment of Course Intended Learning Outcomes (CILOs) to Program Intended Learning Outcomes (PILOs) | | | | | |
|----------|--|----------|--|--|--|--|
| | CILOs | | PILOs | | | |
| 5 | a. Knowledge and Understanding: Upon successful completion of the Energy Efficiency and Conservation Course, the graduates will be able to: | A | Knowledge and Understanding: Upon successful completion of the MSc. in Electrical Power Engineering Program , the graduates will be able to: | | | |
| a1. | Recognize that energy conservation in its various forms is the cornerstone of successful national energy strategy. | A1. | Demonstrate in-depth understanding of the theory and practice of modern electrical power systems design and operation and system identification. | | | |
| a2. | Understand the rationale for and the drivers behind the international trend that energy efficiency has become the first fuel to meet rising energy demand and the first tool to mitigate carbon emissions. | A2. | Recognize and comprehend the key role of sustainable energy for national and global sustainable development. | | | |
| cc C | ognitive/ Intellectual Skills: Upon successful ompletion of the Energy Efficiency and onservation Course, the graduates will be ble to: | su El | Ognitive/ Intellectual Skills: Upon ccessful completion of the MSc. in ectrical Power Engineering Program, e graduates will be able to: | | | |
| b1. | Formulate the parts of knowledge and analysis that are required to carry out projects in connection with administration and efficient use of energy in different sectors. | B1. | Identify, formulate, and solve complex power engineering problems by selecting and applying appropriate tools and techniques. | | | |
| b2. | Develop new ideas to improve the administration, conservation and efficient use of energy. | B2. | Critically review the scientific literature for effective justification and support of results and decisions. | | | |
| su ai | rofessional and Practical Skills: Upon accessful completion of the Energy Efficiency and Conservation Course, the graduates will able to: | Elect | Professional and Practical Skills: a successful completion of the MSc. in trical Power Engineering Program, the nates will be able to: | | | |
| c1. | Conduct energy audits to provide a "bench- mark" (Reference point) for managing energy and planning a more effective use of energy | C1. | Apply modern tools for research, computation, simulation, analysis, and design of modern power systems. | | | |

| | throughout the organization. | | | | |
|------------|--|--|--|--|--|
| c2. | Evaluate the techno-economic feasibility of the energy conservation and energy efficiency techniques adopted. | gy | of technical problems and apply of areas of knowledge to the solution, a work with other professions to arrive a solution for complex engineer problems. | | |
| | ransferable Skills: Upon successf | | | ls: Upon successful | |
| | ompletion of the Energy Efficiency an | | - | MSc. in Electrical | |
| | onservation Course, the graduates will be to: | | wer Engineeri aduates will be abl | ing Program, the e to: | |
| d1. | Demonstrate analytical and problem-solvir skills appropriate to the energy sector wit focus on energy efficiency improvement ar energy conservation. | th | D1. Demonstrate leadership skills in the workplace, to function professionally a globally competitive world, and communicate engineering result effectively. | | |
| d2. | Function effectively in diverse teams and multi-disciplinary settings to disseminate th | | evance of economics, vork to the profession. | | |
| | benefits of and opportunities for energy efficiency improvement and energy conservation. | · //.). | Pursue advanced lifelong learning | l graduate studies and | |
| V. | Alignment of CILOs to Teaching an | d Assess | sment Strategi | es | |
| | a. Alignment of Knowledge and Understa | | ¥_ | | |
| | Knowledge and Understanding CILOs | | ng Strategies | Assessment Strategies | |
| a1. | Recognize that energy conservation in its various forms is the cornerstone of successful national energy strategy. | Lecture | res • nstrations • ctive class • | Group work Assignments Oral Presentations Written Exams | |
| a2. | Understand the rationale for and the drivers behind the international trend that energy efficiency has become the first fuel to meet rising energy demand and the first tool to mitigate carbon emissions. | | | | |
| | | | | | |
| | b. Alignment of Intellectual Skills CILOs: | | | | |
|] | b. Alignment of Intellectual Skills CILOs: Intellectual Skills CILOs | | hing Strategies | Assessment Strategies | |
| b1. | Intellectual Skills CILOs Formulate the parts of knowledge and | Teac Lectur | nstrations ctive class | Assessment Strategies • Assignments • Oral s Presentations • Exams | |
| | Intellectual Skills CILOs Formulate the parts of knowledge and analysis that are required to carry out projects in connection with administration and efficient use of | Teac Lectur Demo: Interac | res nstrations ctive class | AssignmentsOralPresentations | |
| b1. | Intellectual Skills CILOsIntellectual Skills CILOsFormulate the parts of knowledge and analysis that are required to carry out projects in connection with administration and efficient use of energy in different sectors.Develop new ideas to improve the administration, conservation and | Teac Lectur Demo: Interac discus | res nstrations ctive class sion | Assignments Oral Presentations | |
| b1. | Intellectual Skills CILOsFormulate the parts of knowledge and analysis that are required to carry out projects in connection with administration and efficient use of energy in different sectors.Develop new ideas to improve the administration, conservation and efficient use of energy. | Teac Lectur Demo: Interac discus | res nstrations ctive class sion | Assignments Oral Presentations | |

| | "bench-mark" (Reference point) for managing energy and planning a more effective use of energy throughout the organization. | DemonstrationsInteractive class discussion | Oral PresentationsExams | | |
|--|--|---|---|--|--|
| c2. | Evaluate the techno-economic feasibility of the energy conservation and energy efficiency techniques adopted. | | | | |
| d. Alignment of Transferable (General) Skills CILOs: | | | | | |
| | | | Assessment Strategies | | |
| | Transferable (General) Skills CILOs | Teaching Strategies | Assessment Strategies | | |
| d1. | Transferable (General) Skills CILOsDemonstrate analytical and problem- solving skills appropriate to the energy sector with focus on energy efficiency improvement and energy conservation. | Teaching Strategies Demonstrations Interactive class discussion | Assessment Strategies Assignments Oral Presentations. | | |

| | VI. Course Content | | | | | | |
|-------------|---|--|--------------------|------------------|------------------------------------|--|--|
| I. Order | Theoretical Aspect Topic List / Units | Sub -Topics List | Number of Weeks | Contact Hours | Course ILOs | | |
| 1 | Sustainable Development and Energy Role | Sustainable Development Goals Goal 7 - Sustainable Energy Energy Sources, Conversion and Use Emissions from electricity generation A Low Carbon Future-Low-emissions Development Energy Indicators for Sustainable Development Energy Efficiency Indicators – World Statistics Energy Efficiency Standards | 1 | 3 | a.1, a.2 | | |
| 2 | Elements of Energy Conservation and Management | General energy problem, Sector wise Energy consumption, demand supply gap, Scope for energy conservation and its benefits Energy conservation Principles Mandatory provisions of Energy conservation acts Energy management concept and objectives Energy management programmes Energy Conservation vs. Energy Efficiency Behavior and energy use – Rational Use of Energy | 1 | 3 | a.1, a.2, b.1, b.2, c.1, c.2 | | |

| 3 | Energy Conservation in Power Systems | Supply-side Efficiency Performance improvement of existing power plants Energy efficient power generation Cogeneration, Combined Cycle Power Plants Distributed Generation (Combined heat and power, Micro-turbines, Renewable energy systems) Zero Emissions Power Generation Technical measures to optimize transmission & distribution losses Demand side Efficiency Demand side management policy concepts Load response programmes Types of tariffs and restructuring of electric tariff Energy Efficiency Policy | 3 | 9 | a.1, a.2, b.1, b.2, c.1, c.2, d.2 |
|---|---|---|---|---|--|
| 4 | Energy-efficient technologies for green buildings | Definition of Green Buildings Green Engineering and Green Cities Aims of Green buildings/fundamental objectives of green buildings Benefits of green buildings Green Building Certification Programmes (LEED, BREAM,) Zero Energy Buildings | 2 | 6 | a.1, a.2, b.1, b.2, c.1, c.2 |
| 5 | | Midterm Exam | 1 | 3 | a.1, a.2, b.1, b.2 |
| | Energy-efficient technologies for | Energy efficient industrial power generation Energy-efficient industrial Equipment | | | a.1, a.2, |
| 6 | industrial processes | Saving opportunities in electric motors Benefits of Power factor improvement Energy conservation by Variable Speed Drives | 2 | 6 | b.1, b.2, c.1, c.2, d.1, d.2 |
| 6 | | Benefits of Power factor improvement Energy conservation by Variable Speed Drives Energy audit and its benefits, Energy flow diagram Preliminary, Detailed energy audit. Methodology of energy audit Energy audit report. Electrical Measuring Instruments | 2 | 6 | c.1, c.2, |
| | processes | Benefits of Power factor improvement Energy conservation by Variable Speed Drives Energy audit and its benefits, Energy flow diagram Preliminary, Detailed energy audit. Methodology of energy audit Energy audit report. Electrical Measuring Instruments | | | c.1, c.2, d.1, d.2 a.1, a.2, b.1, b.2, c.1, c.2, |

| | | Ĩ | | | b.1, b.2 |
|----|------------|---|---|---|-----------------------|
| 10 | Final Exam | All Topics | 1 | 3 | a.1, a.2, b.1, b.2 |
| | | Green Energy Audit of Buildings Promoting Energy Conservation and Efficiency through Education | | | |

| 2. | Practical Aspect NA | | | |
|-------|---|--------------------|------------------|-------------|
| Order | Practical / Tutorials topics | Number of Weeks | Contact Hours | Course ILOs |
| 1 | • | | | |
| 2 | • | | | |
| 3 | • | | | |
| | Number of Weeks /and Contact Hours Per Semester | | | |

| 3. | Tutorial Aspect: NA | | | |
|-----|---|--------------------|------------------|--|
| No. | Tutorial | Number of Weeks | Contact Hours | Learning Outcomes (<u>C</u> ILOs) |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| | Number of Weeks /and Units Per Semester | 15 | 30 | |

VII. Teaching Strategies:

- Formal lectures
- Interactive discussions
- Group work
- Presentations

VIII.Assessment Methods of the Course:

- Group work
- Assignments
- Oral Presentations
- Written Exams

| IX. | IX. Tasks and Assignments: | | | | | | |
|-----|--|----------------------|------|----------|---|--|--|
| No | Assignments/ Tasks | Individual/ Group | Mark | Week Due | CILOs (symbols) | | |
| 1 | Group work; groups will: Prepare a report based on a survey of at least three nearby industries on energy conservation measures adopted by them using questionnaire. Carry out a survey on internet and prepare a report on energy conservation legislations in Yemen compared with other countries. | Group | 20 | 3-14 | a.1, a.2, b.1, b.2, c.1, c.2, d.1, d.2 | | |

| Carry out detailed energy audit of the Faculty of Engineering or any other official building. By the end of the semester (Week 14), Student Groups will submit their Final Reports and deliver a PowerPoint presentation within a plenary session. | | | |
|---|----|---|---|
| Total Score | 20 | - | - |

| X. | X. Learning Assessment: | | | | | | | |
|-----------|-------------------------|-------------|------|-----------------------------------|--|--|--|--|
| No. | Assessment Tasks | Week due | Mark | Proportion of Final Assessment | CILOs | | | |
| 1 | Assignments | 3-14 | 20 | 20% | a.1, a.2, b.1, b.2, c.1, c.2, d.1, d.2 | | | |
| 2 | Mid-Term Exam | 8 | 20 | 20% | a.1, a.2, b.1, b.2 | | | |
| 3 | Final Exam | 16 | 60 | 60% | 0.2 | | | |
| | Total | | 100 | 100% | - | | | |

VIII Learning Resources and Facilities

1- Required Textbook(s)

- Frank Kreith, D. Yogi Goswami, 'Energy Management and Conservation Handbook', 2nd Edition, CRC Press, 2017.
- Ming Yang, Xin Yu, 'Energy Efficiency Benefits for Environment and Society', Springer, 2015.

2- Essential References

- Moncef Krarti, 'Energy-Efficient Electrical Systems for Buildings', Taylor & Francis Group, 2017.
- Albert Thumann, Terry Niehus, William J. Younger, 'Handbook of Energy Audits', 9th Edition, River Publishers, 2012.
- D. Yogi Goswami, Frank Kreith, 'Energy Efficiency and Renewable Energy Handbook', 2nd Edition, CRC Press, 2016.

3- Electronic Materials and Websites etc.

- Course Power Point.
- Video clips.
- Links to information resources.

Educational and research Facilities and Equipment Required

Technology Resources (AV, data show, Smart Board, software, etc.)

Other Resources

(Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)

| الضوابط والسياسات المتبعة في المقرر Course Policies |) |
|--|---|
| بعد الرجوع للوائح الجامعة يتم كتابة السياسة العامة للمقرر فيما يتعلق بالآتي: | |
| سياسة حضور الفعاليات التعليمية Class Attendance: | 1 |
| يلتزم الطالب بحضور 75% من المحاضرات ويحرم في حال عدم الوفاء بذلك. | |
| يقدم أستاذ المقرر تقريرا بحضور وغياب الطلاب للقسم ويحرم الطالب من دخول الامتحان في حال تجاوز الغياب 25% ويتم | |
| اقرار الحرمان من مجلس القسم. | |
| الحضور المتأخر Tardy: | 2 |
| يسمح للطالب حضور المحاضرة إذا تأخر لمدة ربع ساعة لثلاث مرات في الفصل الدراسي، وإذا تأخر زيادة عن ثلاث مرات | |
| يحذر شفويا من أستاذ المقرر، وعند عدم الالتزام يمنع من دخول المحاضرة. | |
| ضوابط الامتحان Exam Attendance/Punctualit <u>y:</u> | 3 |
| - لا يسمح للطالب دخول الامتحان النهائي إذا تأخر مقدار (20) دقيقة من بدء الامتحان | |
| ـ إذا تغيب الطالب عن الامتحان النهائي تطبق اللوائح الخاصة بنظام الامتحان في الكلية. | |
| التعيينات والمشاريع Assignments & Projects: | 4 |
| يحدد أستاذ المقرر نوع التعيينات في بداية الفصل ويحدد مواعيد تسليمها وضوابط تنفيذ التكليفات وتسليمها. | |
| ـ إذا تأخر الطالب في تسليم التكليفات عن الموعد المحدد يحرم من درجة التكليف الذي تأخر في تسليمه. | |
| الغش Cheating: | 5 |
| - في حال تُبوت قيام الطالب بالغش في الامتحان النصفي أو النهائي تطبق عليه لائحة شؤون الطلاب. | |
| - فيَّ حال ثبوت قيام الطالب بالغش او ^{َّ} النقل في التكليفات والمشّاريّع يحرم من الدرجة المخصصة للتكليف. | |
| الانتحال Plagiarism: | 6 |
| – في حالة وجود شخص ينتحل شخصية طالب لأداء الامتحان نيابة عنه تطبق اللائحة الخاصة بذلك | |
| سیاسات أخری Other policies: | 7 |
| أي سياسات أخرى مثل استخدام الموبايل أو مواعيد تسليم التكليفات الخ | |

Academic Year:

Course Plan (Syllabus): Energy Efficiency and Conservation

| I. Information about Faculty Member Responsible for the Course: | | | | | | | |
|---|--|--------------|---------------------|--------------|-----|-----|-----|
| Name | Prof. Dr. Eng. Omar H. Al- Sakaf | Office Hours | | Office Hours | | | |
| Location &Telephone No. | Faculty of Engineering Mobile: 733772328/773332328 | SAT | SUN | MON | TUE | WED | THU |
| E-mail | oalsakaf@gmail.com oalsakaf@yahoo.com | | 08:00 - 12:00 | | | | |

| II. | II. General information about the course: | | | | | |
|-----|---|--------------------------------------|------------------------------------|------------------|-------|--|
| 1. | Course Title | Energy Eff | Energy Efficiency and Conservation | | | |
| 2. | Course Code and Number | |] | PME5313 | | |
| | | Credit Hours | | | Total | |
| 3. | Credit Hours | Lecture | Practical | Seminar/Tutorial | Totai | |
| | | 3 | - | - | 3 | |
| 4. | Study Level and Semester | First Seme | ster | | | |
| 5. | Pre-requisites | - | | | | |
| 6. | Co –requisite | - | | | | |
| 7. | Program (s) in which the course is offered | MSc. in Electrical Power Engineering | | | | |
| 8. | Language of teaching the course | English | | | | |
| 9. | Location of teaching the course | Faculty of | Engineering | | | |

II. Course Description:

Efficiency and sustainability of energy systems are pre-requisites for sustainable development and the challenges to achieve this lie at the interface of technology innovation and human behavior. This course is designed to give students the skills to identify and understand energy efficiency and conservation methods used to reduce energy consumption in the built environment. Students will analyze power systems, residential and industrial facilities for opportunities to employ these energy saving measures. Students will become familiar with the use of energy monitoring and measuring equipment used for energy auditing. Students will also learn to calculate energy savings and determine environmental impacts of these energy saving methods. Topics include elements of energy conservation and management, energy conservation in power systems, energy-efficient technologies for green buildings and industrial processes, energy audit, techno-economic and environmental evaluation of energy efficiency measures and case studies.

IV. Course Intended Learning Outcomes (CILOs):

Upon successful completion of **Energy Efficiency and Conservation** Course, the graduates will be able to:

- al Recognize that energy conservation in its various forms is the cornerstone of successful national energy strategy.
- a2 Understand the rationale for and the drivers behind the international trend that energy efficiency has become the first fuel to meet rising energy demand and the first tool to mitigate carbon emissions.
- b1 Formulate the parts of knowledge and analysis that are required to carry out projects in connection with administration and efficient use of energy in different sectors.
- b2 Develop new ideas to improve the administration, conservation and efficient use of energy.
- c1 Conduct energy audits to provide a "bench-mark" (Reference point) for managing energy and planning a more effective use of energy throughout the organization.
- c2 Evaluate the techno-economic feasibility of the energy conservation and energy efficiency techniques adopted.
- d1 Demonstrate analytical and problem-solving skills appropriate to the energy sector with focus on energy efficiency improvement and energy conservation.
- d2 Function effectively in diverse teams and in multi-disciplinary settings to disseminate the benefits of and opportunities for energy efficiency improvement and energy conservation.

| II. Co | II. Course Contents | | | | |
|--------|--|----------|------------------|--|--|
| A – Th | A – Theoretical Aspects | | | | |
| Order | Topics List | Week Due | Contact Hours | | |
| 1 | Sustainable Development and Energy Role | Week 1 | 3 | | |
| 2 | Elements of Energy Conservation and Management | Week 2 | 3 | | |
| 3 | Energy Conservation in Power Systems | Week 3-5 | 9 | | |

| II. Co | II. Course Contents | | | |
|--------|--|--------------|---|--|
| A – Th | eoretical Aspects | | | |
| 4 | Energy-efficient technologies for green buildings | Week 6-7 | 6 | |
| 5 | Midterm Exam | Week 8 | 3 | |
| 6 | Energy-efficient technologies for industrial processes | Week 9-10 | 6 | |
| 7 | Energy Audit | Week 11 - 12 | 6 | |
| 8 | Techno-economic and environmental evaluation of energy efficiency measures | Week 13 | 3 | |
| 9 | Practical examples and case studies | Week 14 - 15 | 6 | |
| 10 | Final Exam | Week 16 | 3 | |
| Numbe | Number of Weeks and Units Per Semester1648 | | | |

| | 1. Practical Aspect NA | | | |
|-------|---|--------------------|------------------|-------------|
| Order | Practical / Tutorials topics | Number of Weeks | Contact Hours | Course ILOs |
| 1 | | | | |
| 2 | | | | |
| | Number of Weeks /and Contact Hours Per Semester | | | |

| 2 | 2. Training/ Tutorials/ Exercises Aspects: | NA | |
|-------|---|----------|----------------------|
| Order | Tutorials/ Exercises | Week Due | Contact Hours |
| 1 | | | |
| 2 | | | |
| Numb | er of Weeks /and Contact Hours Per Semester | | |

V. Teaching Strategies:

• Formal lectures

• Interactive discussions

• Group work

• Presentations

VI. Assessment Methods of the Course:

- Group work
- Assignments
- Oral Presentations
- Written Exams

| IX. | Tasks and Assignments: | | | |
|-----|---|-------------------|------|----------|
| No | Assignments/ Tasks | Individual/ Group | Mark | Week Due |
| 1 | Group work; groups will: Prepare a report based on a survey of at least three nearby industries on energy conservation measures adopted by them using questionnaire. Carry out a survey on internet and prepare a report on energy conservation legislations in Yemen compared with other countries. Carry out detailed energy audit of the Faculty of Engineering or any other official building. By the end of the semester (Week 14), Student Groups will submit their Final Reports and deliver a PowerPoint presentation within a plenary session. | Group | 20 | 3-14 |
| | Total Score | | 20 | - |

| XI. I | XI. Learning Assessment: | | | | |
|-------|--------------------------|----------|------|-----------------------------------|--|
| No. | Assessment Tasks | Week due | Mark | Proportion of Final Assessment | |
| 1 | Assignments | 3-14 | 20 | 20% | |
| 2 | Mid-Term Exam | 8 | 20 | 20% | |
| 3 | Final Exam | 16 | 60 | 60% | |
| | Total | | | 100% | |

VIII Learning Resources and Facilities 1- Required Textbook(s)

- Frank Kreith, D. Yogi Goswami, 'Energy Management and Conservation Handbook', 2nd Edition, CRC Press, 2017.
- Ming Yang, Xin Yu, 'Energy Efficiency Benefits for Environment and Society', Springer, 2015.
 2- Essential References
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- Albert Thumann, Terry Niehus, William J. Younger, 'Handbook of Energy Audits', 9th Edition, River Publishers, 2012.
- D. Yogi Goswami, Frank Kreith, 'Energy Efficiency and Renewable Energy Handbook', 2nd Edition, CRC Press, 2016.
 - 3- Electronic Materials and Websites etc.
- Course Power Point.
- Video clips.
- Links to information resources.

Educational and research Facilities and Equipment Required

Technology Resources

(AV, data show, Smart Board, software, etc.)

Other Resources

(Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)

| • • | |
|--|---|
| الضوابط والسياسات المتبعة في المقرر Course Policies |) |
| بعد الرجوع للوائح الجامعة يتم كتابة السياسة العامة للمقرر فيما يتعلق بالآتي: | |
| سياسة حضور الفعاليات التعليمية Class Attendance: | 1 |
| _ يلتزم الطالب بحضور 75% من المحاضرات ويحرم في حال عدم الوفاء بذلك. | |
| - يقدم أستاذ المقرر تقريرا بحضور وغياب الطلاب للفسم ويحرم الطالب من دخول الامتحان في حال تجاوز الغياب 25% ويتم | |
| اقرار الحرمان من مجلس القسم. | |
| الحضور المتأخر Tardy: | 2 |
| ـ يسمح للطالب حضور المحاضرة إذا تأخر لمدة ربع ساعة لثلاث مرات في الفصل الدراسي، وإذا تأخر زيادة عن ثلاث مرات | |
| يحذر شفويا من أستاذ المقرر، وعند عدم الالتزام يمنع من دخول المحاضرة. | |
| ضوابط الامتحان Exam Attendance/Punctuality: | 3 |
| | |
| - إذا تغيب الطالب عن الامتحان النهائي تُطبق اللوائح الخاصة بنظام الامتحان في الكلية. | |
| التعيينات والمشاريع Assignments & Projects: | 4 |
| - يحدد أستاذ المقرر نوع التعيينات في بداية الفصل ويحدد مواعيد تسليمها وضوابط تنفيذ التكليفات وتسليمها. | |
| - إذا تأخر الطالب في تسليم التكليفات عن الموعد المحدد يحرم من درجة التكليف الذي تأخر في تسليمه. | |
| الغش Cheating: | 5 |
| - في حال ثبوت قيام الطالب بالغش في الامتحان النصفي أو النهائي تطبق عليه لائحة شؤون الطلاب. | |
| - في حال تُبوت قيام الطالب بالغش أو النقل في التكليفات والمشاريع يحرم من الدرجة المخصصة للتكليف. | |
| الانتحال Plagiarism: | 6 |
| – في حالة وجود شخص ينتحل شخصية طالب لأداء الامتحان نيابة عنه تطبق اللائحة الخاصة بذلك | |
| | 7 |
| سياسات أخرى Other policies: | 7 |
| أي سياسات أخرى مثل استخدام الموبايل أو مواعيد تسليم التكليفات الخ | |

