

| رمز المادة | نوع المادة | الساعات الأسبوعية | | | السنة الدراسية | اسم المادة |
|------------|------------|-------------------|---|---|----------------|--------------------------------------------|
| | مساعدة | الوحدات | ع | ن | الثانية | ميكانيك هندسي/٢ Engineering mechanics/2 |
| | | ٦ | ٢ | ٢ | ٣٠ أسبوع | |

أهداف المادة: تعريف الطالب على تأثيرات الاهتزازات على الأجزاء الميكانيكية وكذلك دراسة الديناميك الحراري للمواد وميكانيكية الموائع.

Section A- Vibration

| Week | Syllabus |
|------------------------------------|-------------------------------------------------------------------------------|
| 1 st , 2 nd | Introduction, vibration of single degree of freedom , undamped freedom system |
| 3 rd , 4 th | Damped free vibration for single degree of freedom system. |
| 5 th , 6 th | Damped free vibration for two degree of freedom system |
| 7 th , 8 th | Harmonically forced vibration for single degree of freedom system. |
| 9 th , 10 th | Vibration measuring instrumentation. |

Section B- Thermodynamics

| Week | Syllabus |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| 12 th | Introduction,(temperature, pressure, heat, energy, work, enthalpy, and their measurements) |
| 13 th , 14 th , 15 th | The first law of thermodynamics and its application. The second law thermodynamics and its application on closed and open system. |
| 16 th | Cycle |
| 17 th , 18 th | Otto, diesel & Brighton cycle. |
| 19 th , 20 th | Fuels & combustion. |

Section C-Fluid Mechanics

| Week | Syllabus |
|-------------------------------------|-------------------------------------------------------------------------------------------------------|
| 21 st , 22 nd | Fluid properties, Fluid static's |
| 23 rd , 24 th | Fluid flow, Fluid measurements |
| 25 th , 26 th | Turbines (impulse, fracice, & reaction), Centrifugal and axial pumps. |
| 27 th , 28 th | Viscous effect |
| 29 th , 30 th | Steady state heat transfer by conduction (in plane walls, Heat transfer conduction (simple approach). |