(2023-W)

Semester - 3rd

Sub - Engineering materials

Basudev Mishra.



| Discipline | mech. | Sem. | 3rd | Name of teaching faculty | Basudev Mishra |
|---|---|---|---|---|---|
| Sub | Engineering materials | No. of days per week | 04 | Semester from | 1/8/23 - 9/12/23 |

| Week | Class/ Day | Theory |
|---|---|---|
| | mon | material classification, ferrous and non-ferrous materials, physical properties of materials. |
| | Tues | x |
| 1st | Wed | chemical properties of material |
| | Thurs | performance requirement of materials |
| | Fri | material reliability and safety |
| | sat | x |
| | | |
| | Mon | characteristic and application of ferrous material. |
| | Tues | x |
| | Wed | classification, composition application of ~~ferrous materials~~ low carbon steel |
| 2nd | Thurs | classification, composition, application of medium carbon steel |
| | Fri | classification, composition, application of high carbon steel |
| | sat | x |
| | | |
| | Mon | Low alloy steel, high alloy steel |
| | Tues | x |
| | Wed | stainless steel, tool steel |
| 3rd | Thurs | concept of phase diagram and cooling curve |
| | Fri | concept of phase diagram and cooling curve |
| | sat | x |
| | | |
| | mon | Allotropic form of iron |
| | Tues | x |
| | Wed | microconstituent of iron and steel |
| 4th | Thurs | microconstituent of iron and steel |
| | Fri | Iron carbon equilibrium diagram. |
| | Sat | x |
| | | |

| | | |
|---|---|---|
| | mon | iron carbon equilibrium diagram |
| | Tues | x |
| | Wed | crystal and crystal classification |
| 5th | Thurs | ideal crystal and crystal imperfection |
| | Fri | point defect, type and causes |
| | Sat | x |
| | | |
| | mon | vaccencies, interstitial and impurities |
| | Tues | x |
| 6th | Wed | Line defects, type and causes |
| | Thurs | Edge and screw dislocations |
| | Fri | surface defect |
| | Sat | x |
| | | |
| | mon | volume defect |
| | Tues | x |
| 7th | Wed | effect of impurities in material properties |
| | Thurs | Deformation by slip |
| | Fri | Deformation by twinning |
| | Sat | x |
| | | |
| | mon | effect of deformation in material properties |
| | Tues | x |
| 8th | Wed | purpose of heat treatment |
| | Thurs | Annealing |
| | Fri | Normalising |
| | Sat | x |



| | | |
|---|---|---|
| | mon | Martempering |
| | Tues | x |
| 9th | Wed | Tempering |
| | Thurs | stress relieving measures |
| | Fri | carburising |
| | Sat | x |
| | | |
| | mon | Nitriding. |
| | Thurs | x |
| | Wed | effect of heat treatment on properties of steel |
| 10th | Thurs | Hardenability of steel |
| | Fri | aluminium alloys. |
| | Sat | x |
| | | |
| | mon | Cu-alloys |
| | Tues | x |
| 11th | Wed | Cu-alloys |
| | Thurs | Zn-alloys |
| | Fri | Ni-alloys |
| | Sat | x |
| | | |
| | mon | Low alloy materials |
| | Tues | x |
| 12th | Wed | Low alloy materials and high alloy materials |
| | Thurs | High alloy materials |
| | Fri | Cu-based bearing materials |
| | Sat | x |

| | | |
|---|---|---|
| | mon | Tin based bearing materials |
| | Tues | x |
| 13th | Wed | Lead based bearing materials |
| | Thurs | Cadmium based bearing materials |
| | Fri | Iron based spring materials |
| | Sat | x |
| | | |
| | mon | Iron based and cu-based spring materials |
| | Tues | x |
| | Wed | cu-based spring materials |
| 14th | Thurs | thermosetting and thermoplastic polymers |
| | Fri | particulate composite and fibre reinforced composites |
| | Sat | x |
| | | |
| | mon | classification and use of ceramics |
| 15th | Tues | x |
| | Wed | reasonfer corrosion and surface wear |
| | Thurs | paintings and methods of Industrial painting. |
| | Fri | |
| | Sat. | x |

9/12/23.