

BME101 Introduction to Biomedical Engineering



NANOMEDICINE

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- **Nanotechnology**

- deals with structures with a size range of 1 to 100 nm
- by manipulating the arrangement of atoms nanotechnology may be able to create many new materials and devices .

- **Nanomedicine**

- The medical application of nanotechnology
- the repair, construction and control of human biological systems using devices built upon nanotechnology standards.
- medical application of nanotechnology.

- **Applications of nanomedicine**

- Drug delivery: approaches, formulations, technologies, and systems for transporting a pharmaceutical compound in the body as needed to safely achieve its desired therapeutic effect.
- Diagnostic use: in imaging as contrast agents in non-invasive medical imaging tools

- **Regenerative Medicine**
 - Tissue engineering
 - Cell therapy
 - Stem cells: Self-renewing, undifferentiated, multipotent cells
 - Embryonic stem cells, adult stem cells, induced pluripotent stem cells