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Subject

Applied Calculus

Submitted to

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Assignment No

01

Applications of Integration in Engineering

- In civil engineering when we dealing with curves or structure having curves Then we may need to find the area under the curve which is to be constructed. So we use integration for this purpose.
- We can find the volume of irregular structure.
- Arc length can be also find by integration.
- We can find center of mass.
- We can calculate beam deflections using integration.
- By double integration Method we can find the curvature, slope and deflection.
- Shear force and bending Moment.

- Moment of Inertia by Intergration
- Average value of a function.
- Integration is used to determine the exact length of cable needed to connect two substation.

Application of Derivatives in Engineering

- We use the derivative to determine the maximum and minimum value of particular function
eg (Cost, strength, amount of material used in building, profit or loss etc)
- finding derivative of a curve we can find the maximum and minimum point of a curve.
- To solve the financial problems financial engineers use derivatives such as future, forward contract and implementation of ~~final~~ financial decisions.

- Rate of change of Quantities
- Tangents and Normals