Topics

1. Vector and tensor analysis (7 sessions)..………….……………Exercise-1 (30 points)
   - Vector and tensor algebra
   - Differentiation
   - Integral theorems
2. Tensor application in engineering (3 sessions)…………….……Exercise-2 (30 points)
3. Curvilinear coordinates (4 sessions)…………….………...……Exercise-3 (30 points)

Midterm (390 points)

4. Fourier series (7 sessions)………….…..….…………………Exercise-4 (30 points)
   - Trigonometric Fourier series
   - Orthogonality
   - Operations on Fourier series
5. Fourier Integral and application (10 sessions)....……………...Exercise-5 (30 points)
   - Double Fourier series
   - Fourier Integral
   - Fourier Transform

Final (460 points)

Total Grade =1000 points

Total sessions = 32 sessions

Total hours =48 hours

References

1. M.E. Gurtin, E. Fried, and L. Anand, The mechanics and thermodynamics of continua.
2. E.C. Young, Vector and tensor analysis.
3. G.P. Tolstov, Fourier series.
4. F.B. Hildebrand, Advanced calculus for applications.