

**Text Book:** Sturm-Liouville Theory and its Application by M.A.AL-Gwaiz.

1. **Inner Product Space:** All sections.
2. **The Sturm-Liouville Theory:** All sections.
3. **Fourier Series:** All sections.
4. **Orthogonal Polynomials:** 4.1, 4.2, 4.3.
5. **Bessel Functions:** 5.1, 5.2, 5.3, 5.5.
6. **The Fourier Transformation:** All sections.