

I	Course Code	<b>MA 227002</b>								
II	Course Title	<b>Fourier Analysis on the unit circle and on the real line</b>								
III	Credit Structure	<table style="border: none; width: 100%; text-align: center;"> <tr> <td>L</td> <td>T</td> <td>P</td> <td>C</td> </tr> <tr> <td>3</td> <td>1</td> <td>0</td> <td>4</td> </tr> </table>	L	T	P	C	3	1	0	4
L	T	P	C							
3	1	0	4							
IV	Prerequisite (If any)	Basic Functional Analysis								
V	Course Content	<p>Fourier coefficients, Fourier series, summability in norm and homogeneous Banach spaces on <math>\mathbb{T}</math>, pointwise convergence of <math>S_n(f)</math>, the order of magnitude of Fourier coefficients, Fourier series of square summable functions, Absolutely convergent Fourier series, Fourier coefficients of linear functionals, Fourier transforms for <math>L^1(\mathbb{R})</math>, Fourier-Stieltjes transforms, Fourier transforms in <math>L^p(\mathbb{R})</math>, <math>1 &lt; p \leq 2</math>, tempered distributions and pseudo-measures, almost-Periodic functions on the line, the weak-star spectrum of bounded functions, the Paley–Wiener theorems, the Fourier-Carleman transform, Kronecker’s theorem.</p>								
VI	Text/References	<ul style="list-style-type: none"> <li>• Y. Katznelson, Introduction to Harmonic Analysis, Third edition, Cambridge University Press, 2012.</li> <li>• R. E. Edwards, Fourier Series: A Modern Introduction, Vol. I &amp; II, second edition, Springer – Verlag, New York – Heidelberg – Berlin, 1979.</li> <li>• G. H. Hardy and W. W. Rogosinski, Fourier series, Dover, 1999.</li> <li>• N. K. Bary, A Treatise on Trigonometric series, Vol.I &amp; II, Pergamon Press, 1964.</li> <li>• W. Korner, Fourier Analysis, Cambridge University Press, 1989.</li> <li>• Elias M. Stein and Rami Shakarchi, Fourier Analysis: An Introduction, 2003.</li> <li>• A. Zygmund, Trigonometric Series, Vol. I &amp; II, Cambridge University Press, 2002.</li> </ul>								