**LESSON-PLAN (Session 2021-22) Even Semester**

**Name of Professor**: **Dr Iqbal Kaur**

**Subject: Mathematics**

**Class: B. Sc. II / B.A. II**

**Subject/Paper: Special Functions And Integral Transforms**

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| **Sr. No.** | **Days**  | **Topics to be covered** | **Remarks if any** |
|  | **01-04-2022 to 15-04-2022** | Series solution of differential equations – Power series method, |  |
|  | **16-04-2022 to 30-04-2022** | Definitions of Beta and Gamma functions. Bessel equation and its solution: Bessel functions and their propertiesConvergence, recurrence, Relations and generating functions, Orthogonality of Bessel functions. |  |
|  | **01-05-2022 to 15-05-2022** | Legendre and Hermite differentials equations and their solutions: Legendre and Hermite functions and their properties-Recurrence Relations and generating functions. |  |
|  | **16-05-2022 to 31-05-2022** | Orhogonality of Legendre and Hermite polynomials. Rodrigues’ Formula for Legendre &Hermite Polynomials, Laplace Integral Representation of Legendre polynomial. |  |
|  | **01-06-2022 to 15-06-2022** | Laplace Transforms – Existence theorem for Laplace transforms, Linearity of the Laplace transforms, Shifting theorems, Laplace transforms of derivatives and integrals, Differentiation and integration of Laplace transforms, Convolution theorem, Inverse Laplace transforms, convolution theorem, |  |
|  | **16-06-2022 to 30-06-2022** | Inverse Laplace transforms of derivatives and integrals, solution of ordinary differential equations using Laplace transform. |  |
|  | **01-07-2022 to 19-07-2022** | Fourier transforms: Linearity property, Shifting, Modulation, Convolution Theorem, Fourier Transform of Derivatives, Relations between Fourier transform and Laplace transform, Parseval’s identity for Fourier transforms, solution of differential Equations using Fourier Transforms. |  |

\*Vacation as per university calendar

\*Assignment 1 and assignment 2 have to be submitted at the end of April and May, and unit test will be taken every week.

**LESSON-PLAN (Session 2021-22) Even Semester**

**Name of Professor**: **Dr Iqbal Kaur**

**Subject: Mathematics**

**Class: B. Sc. II / B.A. II**

**Subject/Paper: PROGRAMMING IN C & NUMERICAL METHODS**

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| **Sr. No.** | **Days**  | **Topics to be covered** | **Remarks if any** |
|  | **01-04-2022 to 15-04-2022** | Programmer’s model of a computer, Algorithms, Flow charts,Practicals |  |
|  | **16-04-2022 to 30-04-2022** | Data types, Operators and expressions, Input / outputs functions.Practicals |  |
|  | **01-05-2022 to 15-05-2022** | Decisions control structure: Decision statements, Logical and conditional statements, |  |
|  | **16-05-2022 to 31-05-2022** | Implementation of Loops, Switch Statement & Case control structures. Functions, Pre-processors and Arrays.Practicals |  |
|  | **01-06-2022 to 15-06-2022** | Strings: Character Data Type, Standard String handling Functions, Arithmetic Operations on Characters. Structures: Definition, using Structures, use of Structures in Arrays and Arrays in Structures. Pointers: Pointers Data type, Pointers and Arrays, Pointers and Functions.Practicals |  |
|  | **16-06-2022 to 30-06-2022** | Solution of Algebraic and Transcendental equations: Bisection method, Regula-Falsi method, Secant method, Newton-Raphson’s method. Newton’s iterative method for finding pth root of a number, Order of convergence of above methods.Practicals |  |
|  | **01-07-2022 to 19-07-2022** | Simultaneous linear algebraic equations: Gauss-elimination method, Gauss-Jordan method, Triangularization method (LU decomposition method). Crout’s method, Cholesky Decomposition method. Iterative method, Jacobi’s method, Gauss-Seidal’s method, Relaxation method.Practicals |  |

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