

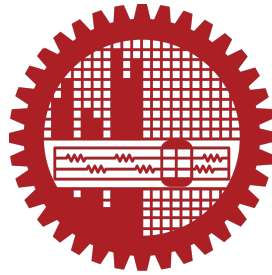
# **CSE300 Assignment1**

## **Introduction to $\text{\LaTeX}$**

### **Enumeration via Euler Characteristic Integrals**

Madhusudan Basak  
Mahmudur Rahman Hera  
Student ID: 1505071

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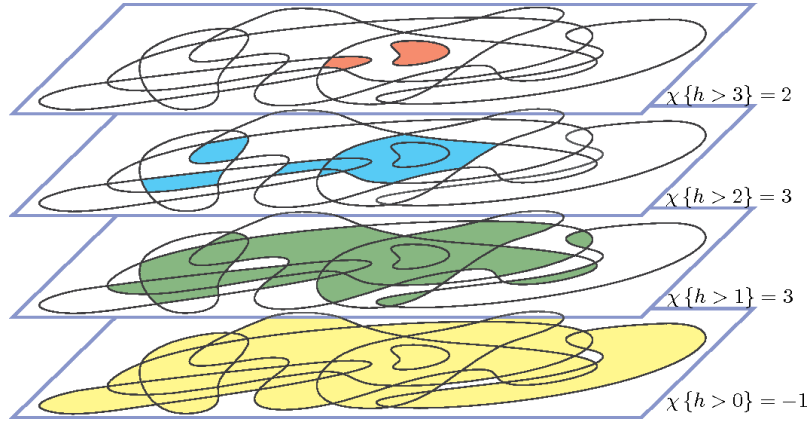
Department of Computer Science and Engineering  
Bangladesh University of Engineering and Technology  
(BUET)  
Dhaka 1000  
April 16, 2018

# 1 Time-dependent equation

The form of the Schrödinger equation depends on the physical situation (see below for special cases). The most general form is the time-dependent Schrödinger equation (TDSE), which gives a description of a system evolving with time:

$$i\hbar \frac{\delta}{\delta t} |\psi(r, t)\rangle = \hat{\mathbf{H}} |\psi(r, t)\rangle \quad (1)$$

where  $i$  is the imaginary unit,  $\hbar$  is the reduced Planck constant which is:  $\hbar = \frac{h}{2\pi}$ , the symbol  $\frac{\delta}{\delta t}$  indicates a partial derivative with respect to time  $t$ ,  $\psi$  (the Greek letter psi) is the wave function of the quantum system,  $r$  and  $t$  are the position vector and time respectively, and  $\hat{\mathbf{H}}$  is the Hamiltonian operator (which characterises the total energy of the system under consideration). The most famous example is the nonrelativistic Schrödinger equation for a single particle moving in an electric field (but not a magnetic field; see the Pauli equation).



The equation 1 is a typical power series. this is fig