

Course Code	Course Title	L	T	P	C
1156EC411	VERIFICATION USING SYSTEMC	0	0	0	2

a) Course Category

Independent Learning – Self Learning Course

b) Course Content

UNIT I Overview of System

C++ mechanics of systemC, The architecture of the SystemC, The benefits and risks of adopting SystemC, SystemC header files and namespaces, Compiling and executing a SystemC model

UNIT II Fundamentals of systemC

SystemC Data Types, SystemC Data Types - Data Types, Integer and bit Types, OperatorsSystemC Statement and Flow Control, SystemC Functions, SystemC Modules and Hierarchy

UNIT III SystemC components

SystemC Threads and methods, Debugging and Tracing, Ports, Interfaces and Channels, Bus modeling, Transaction level modelling

UNIT IV SystemC Synthesis

RTL versus behavioural synthesis technology , Synthesizable data types, Synthesis restrictions, Clocked threads and resets

UNIT V SystemC Verification Library

Introduction to and aims of SCV, Constrained random verification methodology, Extended data types to support introspection, Randomization, Transaction Recording

c) Learning Resources

1. SystemC: From Ground Up (Second Edition)
2. <https://www.verifcationguide.com/p/systemc-tutorial.html>
3. <http://www.asic-world.com/examples/systemc>