

Model Standards — SBML, SBGN & COMBINE Archive — Hands-on

Learn how to make your systems biology models **FAIR, interoperable and shareable** using community standards. This module covers SBML for model encoding, SBGN for pathway diagrams, and COMBINE archives for packaging models, data and metadata together. You will practice working with these standards in tools such as COPASI, tellurium, libSBML based scripts and SBGN editors, and produce publication and repository ready model packages.

Model Standards — SBML, SBGN & COMBINE Archive

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Session 1

Fee: Rs 8800 [Apply Now](#)

Standards Ecosystem & SBML Basics

Why standards for systems biology models

[reproducibility & interoperability](#) [FAIR principles](#)
[community resources & repositories](#)

Overview of SBML, SBGN & COMBINE

[roles of SBML, SBGN and COMBINE](#) [how they connect](#)

in workflows | model, diagram & archive layers

SBML basics & level overview

SBML core concepts (species, reactions, parameters)
levels & packages (high level) | simple SBML example
walkthrough

Session 2

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SBML Models: Structure, Tools & Annotations

Inside an SBML model file

components: compartments, species, reactions
parameters, rules & events (overview) | units &
consistency checks

Tools for working with SBML

COPASI & tellurium | libSBML based scripts
(Python/R) | model import/export across tools

Annotations & metadata for SBML

MIRIAM style annotations (high level) | linking to
ontologies and databases | good practices for FAIR
models

Session 3

Fee: Rs 14800 | Apply Now

SBGN Diagrams & COMBINE Archives

SBGN languages & pathway diagrams

SBGN Process Description, Activity Flow (overview)
core glyphs & visual conventions | linking SBGN
diagrams to models

Tools for SBGN & layouts

CellDesigner / SBGN-ED / Newt (overview) **layout & style considerations** **export for figures & sharing**

COMBINE archives for packaging models

what a COMBINE archive contains **models, diagrams, data & metadata together** **basic archive creation workflows**

Session 4

Fee: Rs 18800 Apply Now

Mini Capstone: Standardizing & Packaging a Model

End to end standardization of a small model

Theory + Practical

From raw model to SBML, SBGN & COMBINE archive

encoding or cleaning the SBML model **creating a matching SBGN diagram** **packing into a COMBINE archive with metadata**

Validation, sharing & repository submission (concept level)

running basic validators **preparing for BioModels or similar repositories** **PDF/HTML documentation & archive description**