COMP9153
Algorithmic Verification (10)
automata and temporal logic
CTL and LTL model checking
Uppaal and fairness
static analysis
Syntactic Software Model Checking
SAT solving, SAT-based model checking

COMP9152
Comparative Concurrency Semantics (5)
process algebra
semantic models of concurrent systems
semantic equivalences
modal and temporal logic
algorithmic verification
reasoning about knowledge

COMP9151
Foundations of Concurrency (20)
interleaving, interference freedom
temporal logic, fairness
invariants, progress properties
Szymanski's algorithm
semaphores
monitors, message passing
compositionality, termination
commitment and consensus
distributed algorithms

COMP9171
Object-Oriented Programming (110)
iterator, sequential containers, associative containers, adaptors
STL algorithms, function and class templates
copy control, overloaded operators, conversions
inheritance, dynamic binding, object model
memory management, exception handling
metaprogramming, multiple inhertiance
project work: C++

COMP9161
Concepts of Programming Languages (40)
syntax, operational/axiomatic/denotational semantics
paradigms: imperative, OO, functional, concurrent, parallel
dynamic/strong typing, polymorphism, overloading
automatic memory management, multicore parallelism
project work: Haskell (no prior experience needed)

COMP9181
Language-based Software Safety (15)
advanced type systems
domain-specific languages
program transformations
purity and controlled effects
parallelism and concurrency
project work: Haskell (no prior experience needed)

COMP9102
Programming Languages & Compilers (50)
finite state automata, regular expressions
formal language specification strategies
context-free grammars, top-down vs bottom-up parsing
attribute grammars, type checking,
machine-level languages, JVM, visitor design pattern
project work: java