Dept Number	CS 511	Course Title	Formal Specification of Programming Languages
Semester Hours	3	Course Coordinator	Shahram Rahimi
Catalog Description	A study of algorithmic techniques which solve high complexity design rules. Graph algorithms and formulations, randomized solutions, techniques from operations research and statistics, computational geometry algorithms and data structures are introduced. The techniques are mainly applied on the physical design/automation problem for integrated circuits and systems.		

Textbooks

References

Course Learning Outcomes

- To be able to read and comprehend formal definitions of programming languages
- To have a deeper understanding of the design and structure of programming languages
- To be aware of several diverse approaches to formal semantics
- To be aware of the potential applications of formal language specification, such as program verification and compiler generation

Assessment of the Contribution to Program Outcomes

Outcome →	1	2	3	4	5	6	7	8	9	10
Assessed →	X	X	X		X					

Prerequisites by Topic

CS 311.

Major Topics Covered in the Course

1. BNF and its variants
2. Attribute grammars
3. Two-level grammars
4. Operational semantics and Vienna Definition Languages
5. Denotational semantics
6. Axiomatic semantics
7. Programming languages as metalanguages