The Complete Syntax of Lua

[From the Lua 5.3 manual.] Here is the complete syntax of Lua in extended BNF. For operator precedences, see §3.4.8; for a description of the terminals Name, Numeral, and String, see §3.1.

Chunk: Block

Block: { Stmt } [ RetStmt ]

Stmt: ;   
| VarList = ExprList   
| Call   
| Label   
| break   
| goto Name   
| do Block end   
| while Expr do Block end   
| repeat Block until Expr   
| if Expr then Block { elseif Expr then Block } [ else Block ] end   
| for Name = Expr , Expr [ , Expr ] do Block end   
| for NameList in ExprList do Block end   
| function FuncName FuncBody   
| local function Name FuncBody   
| local NameList [ = ExprList ]

RetStmt: return [ ExprList ] [ ; ]

Label: :: Name ::

FuncName: Name { . Name } [ : Name ]

VarList: Var { , Var }

Var: Name | PrefixExpr [ Expr ] | PrefixExp . Name

NameList: Name { , Name }

ExprList: Expr { , Expr }

Expr: nil | false | true | Numeral | String | ... | Function   
| PrefixExpr | TableConstructor | Expr BinOp Expr | UnOp Expr

PrefixExpr: Var | Call | ( Expr )

Call: PrefixExpr Args | PrefixExp : Name Args

Args: ( [ ExprList ] ) | TableConstructor | String

Function: function FuncBody

FuncBody: ( [ ParamList ] ) Block end

ParamList: NameList [ , ... ] | ...

TableConstructor: { [ FieldList ] }

FieldList: Field { FieldSep Field } [ FieldSep ]

Field: [ Expr ] = Expr | Name = Expr | Expr

FieldSep: , | ;

BinOp: + | - | \* | / | // | ^ | % | & | ~ | | | >> | <<   
| .. | < | <= | > | >= | == | ~= | and | or

UnOp: - | not | # | ~