ME220 Final Exam Study Sheet

ME 220 Intro to Web Programming

# W3 Schools

* JavaScript Tutorial (<https://www.w3schools.com/js/default.asp>)
* JavaScript Introduction (<https://www.w3schools.com/js/js_intro.asp>)
* Putting JS in a web page (<https://www.w3schools.com/js/js_whereto.asp>)
* Printing with JS (<https://www.w3schools.com/js/js_output.asp>)
* JS Statements (<https://www.w3schools.com/js/js_statements.asp>)
* JS Syntax (<https://www.w3schools.com/js/js_syntax.asp>)
* JS Comments (<https://www.w3schools.com/js/js_comments.asp>)
* JS Variables (<https://www.w3schools.com/js/js_variables.asp>)
* Let and Const (<https://www.w3schools.com/js/js_let.asp> and <https://www.w3schools.com/js/js_const.asp>)
* Operators, Arithmetic, and Assignment (<https://www.w3schools.com/js/js_operators.asp>, <https://www.w3schools.com/js/js_arithmetic.asp>, <https://www.w3schools.com/js/js_assignment.asp>)
* Strings, numbers, Booleans, arrays, objects (<https://www.w3schools.com/js/js_datatypes.asp>)
* Functions (<https://www.w3schools.com/js/js_functions.asp>)
* Objects (<https://www.w3schools.com/js/js_objects.asp>)
* Events (<https://www.w3schools.com/js/js_events.asp>)
* Strings (<https://www.w3schools.com/js/js_strings.asp>, +Methods, +Search)
* Numbers: Integers vs Floating-Point (<https://www.w3schools.com/js/js_numbers.asp>, +Number Methods)
* Arrays (<https://www.w3schools.com/js/js_arrays.asp>, +Methods, +Sort, +Iteration)
* And more (+[Math](https://www.w3schools.com/js/js_math.asp), +[Booleans](https://www.w3schools.com/js/js_booleans.asp), +[Comparisons](https://www.w3schools.com/js/js_comparisons.asp), +[If Else](https://www.w3schools.com/js/js_if_else.asp), +[Switch](https://www.w3schools.com/js/js_switch.asp), +[Loop For](https://www.w3schools.com/js/js_loop_for.asp), +[Loop While](https://www.w3schools.com/js/js_loop_while.asp), +[Break](https://www.w3schools.com/js/js_break.asp))
* HTML DOM (<https://www.w3schools.com/js/js_htmldom.asp>)
* DOM Methods (<https://www.w3schools.com/js/js_htmldom_methods.asp>)
* DOM Document (<https://www.w3schools.com/js/js_htmldom_document.asp>)
* Finding DOM Elements (<https://www.w3schools.com/js/js_htmldom_elements.asp>)
* Changing DOM Elements (<https://www.w3schools.com/js/js_htmldom_html.asp>)
* AJAX Intro (<https://www.w3schools.com/js/js_ajax_intro.asp>, +[XMLHttpRequest](https://www.w3schools.com/js/js_ajax_http.asp))
* JS Canvas (<https://www.w3schools.com/js/js_graphics_canvas.asp>)
* JS Chart.js (<https://www.w3schools.com/js/js_graphics_chartjs.asp>)

# Notes from the GitHub Repo

* <https://github.com/microwerx/gsbc-intro-web/>

# Terms

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| Computer program | List of instructions to be executed by a computer. |
| Statements | Programming instructions in a programming language |
| Syntax | The set of rules defining a programming language |
| Literals | Fixed values like strings, numbers, and Boolean values |
| Variables | Declared names that store data values |
| Comments | Syntax to explain code to make it readable |
| Identifier | A unique name to identify a variable |
| Let | A *mutable* variable |
| Const | An *immutable* reference to a variable |
| Constant | An *immutable* value to a variable (Objects are mutable, but literals are not) |
| Operators | Literals in a programming language for doing arithmetic and assignment |
| Modulus | The % literal returns integer remainder |
| Boolean | A value that is either true or false |
| Boolean Algebra | A set of rules that operate on Boolean values: AND, OR, NOT, XOR |
| Global Scope | Variables can be accessed anywhere in the program |
| Function Scope | Variables cannot be accessed from outside a function |
| Block Scope | Variables cannot be accessed from outside the block |
| JSON | JavaScript Object Notation (<http://json.org>) |
| Debugging | Searching and Fixing code that has syntax errors or logical errors |
| JavaScript debugger | All modern browsers have a built-in JS debugger (know how yours works!) |
| Breakpoint | Set a place where code execution can be stopped |
| Console.log() | A method to print JS values in the debugger window (a form of debugging) |
| DOM | Document Object Model |
| Object | A custom data type that encapsulates data (member variables, or properties) and code (methods, or member functions) |
| Methods | Actions you can perform on objects (also called member functions) |
| Properties | Values that you can set or change on objects (also called member variables) |
| Constructor | A method objects use to initialize themselves. |
| AJAX | Asynchronous JavaScript and XML |
| HTML | Hypertext Markup Language |
| CDN | Content Delivery Network |
| REST | Representational State Transfer (an architecture) |
| HTTP Methods | GET, POST, DELETE, PUT |
| CRUD | Create, Read, Update, Modify |
| SQL | Structured Query Language used in databases |
| PHP and Perl | Scripting languages geared towards web development |
| UNIX | A multiuser operating system in general use as servers |
| URL | Uniform Resource Locator |
| Turing Complete | Supports changing memory, a conditional branch, and comparison |
| SSH | Secure Shell protocol for operating network services |
| Vi (and Vim) | A common texture editor in UNIX systems |
| Algorithm | A finite sequence of well-defined instructions to solve a class of specific problems. |
| Asymptotics | The growth of memory or program time when the problem size increases |