Programming in JavaScript
VPJEX
Computer Programming and Web Development

MODULE GUIDE (VENDOR)
2025
Semester 2

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1 Module Information

Module name as on EMC	Programming in JavaScript	
Module code as on EMC	VPJEX	
Semester	2	
Lectures	Total: 96	Per week: 16hrs
Prescribed reading	OpenEDG's (edube) JavaScript Essentials 1	
Recommended Reading	Websites: JavaScript Tutorial - tutorialspoint LeetCode JavaScript Tutorial - w3schools	

2 How Much Time Should I Be Spending on My Studies

You should invest time and effort into thoroughly understanding the content and developing practical skills. During teaching weeks, there are approximately 16 hours of dedicated teaching, and we encourage you to spend additional hours on independent study. This includes practising skills, reviewing content, reading, preparing for tests, and ultimately getting ready for your summative examination. Success in your external examination is something employers will value, and you are more likely to be successful in these examinations if you have invested the time and energy to be sure you are competent in the content and skills. Practice is the only way to do this.

Some students may need a little more and others a little less but if you are not spending at least 25 hours per week working independently you are placing your success at risk.

To complete a full-year load, you should be studying as if you are in full-time employment – between 40 and 45 hours a week during the semesters.

3 Module Purpose and Outcomes

PURPOSE:

The purpose of this module is to learn the JavaScript programming language to prepare you to write the JSE-40-01 (Certified Entry-Level JavaScript Programmer Certification) exam from Open EDG Institute.

The main goal of the module is to guide you from a state of complete programming illiteracy to a level of programming knowledge which allows you to design, write, debug, and run programs encoded in the JavaScript language, and to understand the basic concepts of software development technology.

This module focuses on the JavaScript language core concepts, including the essentials of the JavaScript syntax and semantics, best programming practices, JS tools and resources, and coding concepts such as variables, data types, type casting, operators, user interaction, control flow, functions, errors, exceptions, debugging, and troubleshooting.

OUTCOMES

- *Learn the universal concepts of computer programming*
- *Learn the syntax and semantics of the JavaScript language*
- *Practice skills in resolving typical implementation challenges*
- *Design, develop, and debug JS scripts*
- *Algorithmic and analytical thinking*
- *Best practices in programming*

4 Planning and Pacing

	DATES	TOPICS/ UNITS AND CONTENT	MATERIAL
1	29/09 – 03/10	***Module 1: Introduction to Javascript and Computer Programming*** • *How to communicate with the computer.* • *What is JS.* • *JS – Advantages and Limitations.* • *Where is JS used today.* • *Development tools.* • *Online development environment.* • *Local development environment (code editor, interpreter, debugger).* • *How can you run your JavaScript code.* • *Executing the code directly in the console.*	Module 1: Edube Interactive :: JavaScript Essentials 1 (JSE) Module 1
	13/10	**Test 1 on all the work from Week 1 – Module 1**	
2	13/10 – 17/10	***Module 2: Variables, Data Types, Type Casting, and Comments*** • *Naming, declaring and initialising variables.* • *Declarations and strict mode.* • *Changing variable values.* • *Constants.* • *Scope (blocks, shadowing, hoisting).* • *Data types in JS.* • *Primitive data types.* • *Type casting.* • *Conversion.* • *Implicit Conversions.* • *Complex data types.* • *Comments.*	Module 2: Edube Interactive :: JavaScript Essentials 1 (JSE) Module 2

	DATES	TOPICS/ UNITS AND CONTENT	MATERIAL
		• *Documentation.*	
3	20/10 – 24/10	***Module 3: Operators and user Interaction*** • *Assignment operators.* • *Arithmetic operators.* • *Logical operators.* • *String operators.* • *Comparison operators.* • *Other JS operators (typeof, instanceof, delete, and ternary).* • *Operator precedence.* • *How to interact with the user in JavaScript.* • *Dialog boxes.*	Module 3: Edube Interactive :: JavaScript Essentials 1 (JSE) Module 3
	27/10	**Test 2 on all the work from Week 2 and 3 – Modules 2 and 3**	
4	27/10 – 31/10	***Module 4: Control Flow – Conditional Execution and Loops*** • *The if statement.* • *The if–else statement.* • *The if–else–if statement.* • *The conditional operator.* • *The switch–case statement.* • *The while loop.* • *The do–while loop.* • *The for loop.* • *The for–of loop.* • *The for–in loop.* • *The break and continue statements.*	Module 4: Edube Interactive :: JavaScript Essentials 1 (JSE): Module 4

	DATES	TOPICS/ UNITS AND CONTENT	MATERIAL
5	03/11 – 07/11	***Module 5: Functions*** • *Declaring functions.* • *Calling functions.* • *Local variables.* • *The return statement.* • *Function parameters.* • *Shadowing.* • *Parameter validation.* • *Recursion.* • *Functions as first-class members.* • *Function expressions.* • *Synchronous callbacks.* • *Asynchronous callbacks.* • *Arrow functions.*	Module 5: Edube Interactive :: JavaScript Essentials 1 (JSE): Module 5
	10/11	**Test 3 on all the work from Week 4 and 5 – Modules 4 and 5**	
6	10/11 – 14/11	***Module 6: Errors, exceptions, debugging, and troubleshooting*** • *Errors – the programmer's daily bread.* • *Natural languages and communication errors.* • *Errors vs exception.* • *Errors without exceptions.* • *Limited confidence.* • *Types of errors.* • *The try–catch statement.* • *Conditional exception handling.* • *The finally statement.* • *The throw statement and custom errors*	Module 6: Edube Interactive :: JavaScript Essentials 1 (JSE): Module 6

	DATES	TOPICS/ UNITS AND CONTENT	MATERIAL
		• *Step-by-step execution.* • *Environment preparation.* • *The debugger statement.* • *The resume option.* • *Code debugging without the debugger statement.* • *The step over option.* • *The step into option.* • *The call stack option.* • *Viewing and modifying variables.* • *The step out option.*	
	14/11	**Exam on all work – Units 1 to 6**	

5 Assessment Structure

5.1 External Certification

The purpose of this programme is to ensure you are sufficiently skilled to successfully write external certification exams. The NGI certificate of completion/ competence is a measure of the learning you do while you are with us, but the greatest value of this programme is you being ready to achieve external, international certification.

Some of these exam costs are built into your programme fee – please be sure to make use of the opportunity they provide. Other exams (or repeat attempts if you fail an exam) are available at a discounted price if you book them through us.

If you achieve 70% for your examination with us, you have a reasonably good chance of passing the external examination. Exams will be scheduled within specific date ranges, and NGI will ensure that vouchers are prepared and available for those dates. For optional exams, students can inform us when they are ready to write, and we will arrange to procure the voucher for them.

5.2 Important Information Related to Internal Assessment

The purpose of internal assessment is to enable you and NGI to monitor and support your progress towards the competency level required for the external examination and to give us the information required to provide you with an internal competency certificate to verify what you have learned. Full participation in the assessment is thus required.

You are always subject to the requirements of the Intellectual Integrity and Assessment Policies – please make sure that you are familiar with them. They are on myNGI.

You will be required to complete both formative (tests) and summative (exams) assessments. The dates for each are in the planner above – remember that tests and exams are written on the same date across all campuses.

5.3 Formative Assessments: Tests

For this module, you will write 3 formative assessments in the format of 3 Tests. These will normally be ongoing assessments during the module's classes, in line with the instructions set out in the module guide.

Your final academic record from us will not give any weighting to these formative assessments and will only reflect the mark you get for your internal summative examination.

Please note that if you do not average at least 60% for the formative assessments, you are very unlikely to pass the internal examination and will almost certainly not pass the external examination.

5.4 Internal Summative Examination

To pass the module for the purposes of your internal certification, a mark of 70% on your summative assessment is required. An internal summative exam will take place at the end of the module. You have a maximum of three opportunities to achieve competence at this level.

A student who fails to achieve 70% and above after all 3 attempts, will have to re-do the module or will not receive an internal record of competence in the module. We will also not issue vouchers for students who do not have the 70% - see below.

5.5 International Examination

For International exam costs built into your programme fees, a student will only receive a voucher once the student has shown competence by achieving 70% and above in their internal summative assessment. This is because you are not likely to pass the international examination as the internal examination is at a similar level and is in a similar structure.

You may purchase a voucher through us at our preferential pricing for modules that you have not achieved the 70% or where the cost of the international examination is not included.

5.6 Mark and Assessment Structure

As per the pacing table at the start of the Module Guide, you will do three tests (formative) and one examination for internal purposes. For your internal certification, we will calculate your mark as follows.

Mark structure	Units or topics covered	Marks	Period Weight
Test 1 13/10	Modules 1	60	
Test 2 27/10	Modules 2 - 3	60	
Test 3 10/11	Modules 4 - 5	60	
Final Examination 14/11	Modules 1 - 5	120	100%

Remember that you need all the practice you can get if you are to succeed in the external examination.

5.7 Assessment Disputes and Appeals

The turnaround times for marking, the method by which you will receive your results and the ways in which you can appeal are all part of the Assessment Policy. It is up to you to know how this works. Ignorance is not a reason for not complying.

6 Technology You Will Need

Your module has a “home” on myNGI where additional material is stored and where you can access module guides.

Other technology you need access to toolkits, and computers.

This is available on campus in the specific laboratory.

7 Key Concepts

Here are some key terms and concepts that might be relevant to the JSE-40-01 (Certified Entry-Level JavaScript Programmer) exam:

- Exam block #1: Introduction to JavaScript and Computer Programming
- Exam block #2: Variable, Data Types, and Type Casting
- Exam block #3: Operators and User Interaction
- Exam block #4: Control Flow – Conditional Execution and Loops
- Exam block #5: Functions
- Exam block #6: Errors, exceptions, debugging, and troubleshooting

8 Where to Get Help

Your first port of call is this guide and myNGI.

You should also feel free to reach out to your lecturer and your peers.

You are also entitled to engage with the Programme Coordinator on your campus or the Programme Manager nationally.

Reach out to Student Support by emailing the team to assist you with the following:
For general inquiries on academic processes, campus activities, your academic progress, or your well-being email studentsupport@ngi.ac.za.
MS Office and NGI student email address email ithelp@ngi.ac.za.
For myNGI inquiries email myngi@ngi.ac.za.
For inquiries related to your results email emc@ngi.ac.za.
For disputes, complaints, or appeals email appeals@ngi.ac.za.
Get assistance from an Information Specialist by emailing thebridge@ngi.ac.za.

Your success is our priority – let’s achieve it together.