

JavaScript Full Notes & Syllabus (Basic to Advanced)

Complete Syllabus Overview

- JavaScript Introduction and Basics
- Variables, Data Types and Operators
- Conditional Statements and Loops
- Functions and Scope
- Arrays and Objects
- DOM Manipulation and Events
- ES6 Features
- Form Validation
- Local Storage and JSON
- Asynchronous JavaScript
- Promises and Async/Await
- Fetch API and API Integration
- Closures, Hoisting and Prototypes
- Modules and Real Time Projects

BASIC LEVEL

JavaScript is a scripting language used to create dynamic and interactive web pages.

Variables:

var - old method

let - modern method

const - fixed value

Example:

```
let name = "Gopi";
```

```
const age = 22;
```

Data Types:

String, Number, Boolean, Array, Object

Example:

```
let numbers = [10, 20, 30];
```

Conditional Statement Example:

```
if(age >= 18){  
    console.log("Eligible to vote");  
}
```

Loop Example:

```
for(let i=1;i<=5;i++){  
    console.log(i);  
}
```

Function Example:

```
function add(a,b){  
    return a+b;  
}
```

INTERMEDIATE LEVEL

Array Methods:

```
map(), filter(), reduce(), push(), pop()
```

Example:

```
let nums = [1,2,3,4];  
let doubled = nums.map(n => n*2);
```

Objects:

```
let student = {  
  name: "Gopi",  
  course: "JavaScript"  
};
```

DOM Manipulation:

```
document.getElementById("title").innerHTML = "Hello";
```

Events:

```
button.addEventListener("click", function(){  
  alert("Clicked");  
});
```

Form Validation:

Check empty fields and valid email

ES6 Features:

Arrow functions, Destructuring, Spread Operator

Local Storage:

```
localStorage.setItem("name", "Gopi");
```

ADVANCED LEVEL

Asynchronous JavaScript:

`setTimeout()`, `setInterval()`

Promises:

```
let promise = new Promise((resolve,reject)=>{
  resolve("Success");
});
```

Async/Await:

```
async function getData(){
  let res = await fetch(url);
}
```

Fetch API:

```
fetch(url).then(res=>res.json()).then(data=>console.log(data));
```

Closures:

Function inside another function

Hoisting:

Variables and functions move to top

Prototypes:

Used for inheritance

Modules:

`import` and `export`

Real Time Projects:

Weather App, ToDo App, E-commerce Cart