Tertiary Infotech

Curriculum Development : Workplace Learning : Skills Training : Robotics

# WSQ - AI-Assisted C Programming for Arduino

## About This Course

This WSQ AI-Assisted C Programming for Arduino equips learners with essential C programming skills tailored for embedded systems development. Participants will explore fundamental software components such as variables, data types, and control structures, using AI tools to map these elements effectively to Arduino-based applications. The course emphasizes hands-on coding through the Arduino IDE, enabling learners to write, test, and refine embedded C programs with support from AI code assistants.

In addition to software creation, the course focuses on selecting appropriate programming controls to meet complex design requirements and ensuring seamless software-hardware interaction. Learners will integrate and validate embedded modules, leverage AI for debugging, and produce well-structured project documentation, including code diagrams and user-aligned reports. This course is ideal for individuals seeking to streamline embedded development with AI and enhance productivity in real-world Arduino projects

## What You'll Learn

By end of course, learners should be able to:

- LO1: Determine basic software components using C programming methodologies to meet functional specifications
- LO2: Apply C programming methodologiesand tools for software creation
- LO3: Select essential C programming controls and features to meet software design requirements
- LO4: Examine the interoperability and functionality of C programming components

## Course Certificate

Two e-certificates will be awarded to trainees who have passed the assessment.

### 1. Statement of Achievement

**User Interface Design**
**ICT-DES-3008-1.1 TSC**
under ICT Skills Framework
issued by WSG/SSG.

### 2. Certification of Achievement

issued by Tertiary Infotech Pte Ltd.

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## Course Outline:

| |
|---|
| **Topic 1: Key Software Components in Embedded C** |
| Identify C components: variables, data types, functions<br>Analyze specifications using AI tools<br>Map components to embedded system needs |
| **Topic 2: Creating Arduino Applications with AI Tools** |
| Use Arduino IDE and AI code assistants<br>Write and test embedded C programs<br>Apply AI to streamline development |
| **Topic 3: Choosing the Right Controls and Features** |
| Apply control structures and data handling<br>Use AI suggestions to meet design logic<br>Adapt C features for embedded constraints |
| **Topic 4: Testing Code Interoperability and Functionality** |
| Integrate and test embedded modules<br>Use AI to detect and resolve issues<br>Validate software-hardware interactions |
| **Topic 5: Documenting Embedded C Projects with AI** |
| Generate code documentation and diagrams<br>Use AI to draft project reports<br>Align documentation with user needs |
| **Final Assessment** |

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## Course Information

**Course Code: TGS-2023039924**

**Skills Framework: Not Applicable ICT-DES-3005-1.1 TSC**
under ICT Skills Framework

**Course Fee (Before Funding):**

$800.00 (Bef. GST)

$872.00 (Incl. GST)

**Time:** 9:30am-6:30pm
**Duration:** 16hrs (2 days)

**Registration Link:**
https://www.tertiarycourses.com.sg/wsq-ai-assisted-c-programming-for-arduino.html

## Minimum Entry Requirements

### Knowledge and Skills

- Able to operate using computer functions with minimum Computer Literacy Level 2 based on ICAS Computer Skills Assessment Framework.
- Minimum 3 GCE 'O' Levels Passes including English or WPL Level 5 (Average of Reading, Listening, Speaking & Writing Scores).

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## WSQ Funding

WSQ funding is only applicable to Singaporeans/PRs. Subject to eligibility, the funding support is subjected to funding caps.

**Baseline:** Singaporean/PR age 21 and above
**MCES:** Singaporeans aged 40 years old and above
**SME:** Small and Medium Enterprises.

### SkillsFuture Enterprise Credit (SFEC):

Eligible Singapore-registered companies can claim up to $10,000.

**Effective for Courses starting from 1 Jan 2024**

| Full Fee | GST | Nett Fee after Funding (Inc. GST) | |
|---|---|---|---|
| | | Baseline | MCES / SME |
| $800 | $72.00 | $472.00 | $312.00 |

### UTAP Funding

Eligible NTUC members can apply for 50% of the unfunded fee from UTAP, capped at $250 per year. NTUC members aged 40 and above will get increased funding support from $250 to $500.

### Absentee Payroll (AP) Funding

$4.50 per hour, capped at $100,000 per enterprise per calendar year.
AP funding will be computed based on the actual number of training hours attended by the trainee.

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## Frequently Asked Questions

### * What are the prerequisites for WSQ Funding?

1. You need to be a Singaporean Citizen or Permanent Resident, physically based in Singapore.
2. You must successfully complete the programme and pass the assessment in order to be eligible.
3. You must attend at least 75% of the training.

### * Can I club any other grant with this subsidy?

No, you cannot claim any other grant if you are claiming this subsidy from SSG. You should not be claiming for any other grants, subsidies, or tax concessions, provided unless explicitly permitted.

### * Do I need to pay the full fee, and then claim the subsidy from WSQ Funding?

The programme works on a Nett fee model, i.e. you only need to pay the difference between the fee, and the funding amount at the time of enrollment. The training provider (TP) will claim the funding amount from SSG on completion of the programme. In case you fail to complete the programme, or if the claim raised by TP is rejected by SSG then you are liable to pay the funding amount to TP.

## Enquiry

**Email:** enquiry@tertiaryinfotech.com
**Tel:** +65 6100 0613
**Venue:** 12 Woodlands Square, #07-85/86/87,
Woods Square Tower 1, Singapore 733715 (Disabled-Friendly)