

**STACKABLE MODULAR CERTIFICATES**

You will have the flexibility to take the modular certificates in any order and at your own pace\*. The certificates can be stacked up towards the Specialist Diploma.

*\*maximum of 3 years to accumulate the certificates for an academic qualification*

Specialist Diploma in

# UNDERGROUND CONSTRUCTION (SDUC)



Eligible for  
SkillsFuture  
Credit

Land-scarce Singapore has historically looked to build both upward with taller buildings and outward by reclaiming land from sea. Another area that Singapore could do more with, is its underground space. The underground space holds possibilities for creating additional subterranean transport hubs, pedestrian links, cycling lanes, utility plants, storage and research facilities, industrial uses, shopping areas and other public spaces. Developing competency in the area of underground construction is critical to realizing such subterranean construction projects.

The Specialist Diploma in Underground Construction aims to equip participants playing supervisory roles at contracting or consulting firms with the knowledge in geotechnical design concepts, considerations and construction techniques so as to support increasingly complex and challenging underground construction projects.

**Duration:** 3 months per modular certificate (66 hrs)  
(Assessment: 3 hrs)

**Frequency:** 2 to 3 evenings per week  
(some courses may be held on Saturdays)

**Venue:** BCA Braddell Campus and Online Learning

**Fee\*** (Inclusive of GST): S\$2,000 (per modular certificate)

*\*Refer to next page for SSG funding details*

**Assessment:** Continuous and Project Based

*Registration closes 2 weeks prior to course commencement, or when the class is fully subscribed, whichever is earlier. Late registration may be consider on case by case basis.*

## Certificate in Basic Geotechnical Engineering

(Classroom + Synchronous E-Learning)

**MODULAR CERTIFICATE A:** Jan to Mar

- **Engineering Geology, Soil Mechanics and Rock Mechanics**

This course covers the engineering geology, soil mechanics and rock mechanics.

- **Geotechnical Investigation and Monitoring**

This course introduces the geotechnical investigation techniques and monitoring scheme.

- **Underground Development**

This course covers the potential usage of underground spaces, rules and regulations of underground construction and the health and safety aspect consideration for underground development.

## Certificate in Underground Excavation

(Classroom + Synchronous E-Learning)

**MODULAR CERTIFICATE B:** May to Jul

- **Construction Techniques for Basements**

This course provides students with essential knowledge in underground construction design for earth retaining systems and reinforcement as well as construction techniques. It also covers the mechanical and maintenance aspect of underground development, use of building information modelling in underground construction and case studies.

## Certificate in Tunnelling Technique

(Classroom + Synchronous E-Learning)

**MODULAR CERTIFICATE C:** Sep to Nov

- **Construction for Tunnels and Caverns**

This course introduces the concepts and principles of various tunnelling techniques such as tunnel boring machines, drill and blast, New Australian method and immersed tunnel plus the relevant case studies.

## ENTRY REQUIREMENT

Applicants who do not wish to complete the Specialist Diploma programme are not subject to the entry requirements.

The applicant must be a Singapore Citizen or Permanent Resident or holder of valid employment pass/ work permit; and possess one of the following qualifications:

- Degree / Diploma in Civil or Construction
- Degree / Diploma with minimum 3 years of working experience in the built environment

**Note:** Applicants with relevant working experience but do not fulfil the above requirements will be reviewed on a case-by-case basis.

Applicants must have their own computers/laptops with minimum specifications to run BIM software (recommended 16GB RAM minimum) and access student portal.

*Applicants with degree or diploma qualification where English is not the medium of instruction is required to take an English Screening Test (EST) at a fee of S\$23.00 (incl. GST) conducted by the BCA Academy. Alternatively, applicant may choose to achieve the ESS Workplace Literacy Test Level 6 issued by SkillsFuture Singapore (SSG).*

## WHO SHOULD ATTEND

This Specialist Diploma Programme is designed for all built environment professionals whom are interested/ involved in underground construction works.

## AWARD OF CERTIFICATE

A participant must attain at least 75% of physical attendance and complete all assignments to acceptable standards to be eligible to be awarded each modular certificate. Participant who did not complete the assignments to acceptable standards but attained at least 75% of physical attendance will be issued with a certificate of attendance. The successful achievement of all modular certificates will lead to the awarding of the **Specialist Diploma in Underground Construction (SDUC)**.

## WITHDRAWAL

Withdrawal notice must be made in writing to BCA Academy via [bca\\_academy@bca.gov.sg](mailto:bca_academy@bca.gov.sg).

The following stated days are pegged to the modular certificate commencement date:

- 14 days or more, 10% cancellation fee
- Less than 14 days but more than 3 working days, 25% cancellation fee
- 3 working days or less, 100% cancellation fee

## REGISTRATION

Visit BCA Academy Online StoreFront (OSF) @

<https://eservices.bcaa.edu.sg/registration/#/login>

**Course codes:**

Modular Certificate A: 79014A

Modular Certificate B: 79014B

Modular Certificate C: 79014C



## SSG FUNDING^ DETAILS

Modular Certificate Title	Full Course Fee	Singaporeans, Singapore PRs and non SME company sponsored participants. Fee payable after 50% funding support.	Singaporeans 40 years old and above <u>OR</u> SME company sponsored Singaporeans or Singapore PRs. Fee payable after 70% funding support.
Certificate in Basic Geotechnical Engineering Classroom + Synchronous E-Learning (TGS-2022012764)	S\$2,000	S\$1,065.42	S\$691.59
Certificate in Underground Excavation Classroom + Synchronous E-Learning (TGS-2022012766)	S\$2,000	S\$1,065.42	S\$691.59
Certificate in Tunnelling Technique Classroom + Synchronous E-Learning (TGS-2022012765)	S\$2,000	S\$1,065.42	S\$691.59

^ The fees are inclusive of GST and are subject to change.

Participant must achieve at least 75% attendance and pass all assessments. BCA Academy reserves the right to recover the funded amount from the participant (self-sponsored) or employer (company sponsored) if participant did not meet the eligibility criteria. Details of SSG's funding can be found in <https://www.enterprisefuture.gov.sg/content/upgrade-skills/course-fee-and-absentee-payroll-funding.html>