FINAL ASSESSMENT COVER PAGE - 2022/23

Module Code: FEEG2005

Module Title: Materials and structures

Student ID number: 32748361

Number of pages: 1
(*This submission contains xxx number of pages plus this cover page*)

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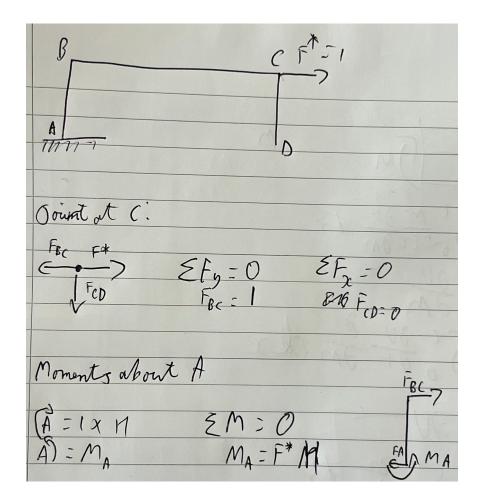

**Date: 22/05/2023**

# 4 SQ2

## 4.1 i

$U = \frac{1}{2} \int_0^H \frac{M^2}{EI} dx$

$U = \left[ \frac{M^2}{IE} x \right]_0^H = \frac{M^2 H}{IE}$

## 4.2 ii



Using method of sections and method of joins

| Member | $F^*_{int}$ |
|--------|-------------|
| CD     | 0           |
| BD     | $-1$        |
| AB     | $F^* H$     |

$$v_D = \frac{\sigma}{E} L + \frac{F^* H I_z}{I_y I_z - I_{yz}^2}$$