**CIV E 474 SYLLABUS**

COURSE NAME: Structural Design II- CIV E 474
DETAILS: 3 hour lectures, 3/2 hour Lab
TERM: Fall

COURSE DESCRIPTION

\*3.8 (fi 8) (either term, 3-0-3/2) Behavior and design of steel and reinforced concrete structures. This course

builds on the material presented in CIV E 374 and places greater emphasis on the behavior of overall

structures.

REQUIRED MATERIAL

Cement Association of Canada, 2016. “Concrete Design Handbook” 4th Edition

Canadian Institute of Steel Construction, 2016. “Handbook of Steel Construction”, 11th Edition

LECTURE CONTENT

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| Section | Topic | Number of lectures (approx.) |
| Reinforced Concrete | Bond and development | 2 |
| Cut-offs and splicing | 2 |
| Moment and shears in continuous members | 1 |
| Design of one-way slabs | 2 |
| Two-way slabs: flexure design | 3 |
| Two-way slabs: shear design | 3 |
| Footings | 2 |
| Slender columns | 2 |
| Steel | Beam-columns | 4 |
| Frames | 2 |
| Composite beams | 5 |
| Moment connections | 2 |
| Bearing plates/stiffeners and base plates | 2 |
| Shear connections | 3 |

LAB CONTENT

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| **Lab Topic** | **Date** |
| Lab 1: Bond, development and cutoffs (Section D1) | 2019-09-09 |
| Lab 2: Bond, development and cutoffs (Section D2) | 2019-09-11 |
| Lab 3: One-way slabs / Two-way slabs (Section D1) | 2019-09-23 |
| Lab 4: One-way slabs / Two-way slabs (Section D2) | 2019-09-25 |
| Lab 5: TBA (Section D1) | 2019-10-07 |
| Lab 6: TBA (Section D2) | 2019-10-09 |
| Lab 7: Beam-columns and frames (Section D1) | 2019-10-28 |
| Lab 8: Beam-columns and frames (Section D2) | 2019-10-30 |
| Lab 9: Composite beams, moment connections, bearing and base plates (Section D1) | 2019-11-18 |
| Lab 10: Composite beams, moment connections, bearing and base plates (Section D2) | 2019-11-20 |