MATH 2028 Honours Advanced Calculus II

"Pre-requisites":

- Single variable calculus ($\approx$ MATH 1010/1018)
- Linear algebra ($\approx$ MATH 1030/1038)
- Proof techniques ($\approx$ MATH 1050/1058)
- Differential multivarible calculus ($\approx$ MATH 2010/2018)

What you will learn in MATH 2028:

- Multiple integrals in $\mathbb{R}^n$
- Fubini's Thm & Change of variable formula

} def'n of $\iint_D f$, $\iiint_D f$ and how to compute these integrals

- vector fields & differential forms

} grad, curl & div

$\omega = dx \wedge dy - dy \wedge dz$

- line / surface integrals & integration over submanifolds

} $\int_C \vec{F} \cdot d\vec{r}$, $\iint_S \vec{F} \cdot \vec{n}\, d\sigma$ and $\int_M \omega$

- "Generalized" Stokes' Thm and applications

} Green's, Stokes', Divergence Thms & $\int_{\partial M} \omega = \int_M d\omega$