

- **Elementary symbolic logic.**

- Topics: Statements, connectives, truth tables, variables and quantifiers, logical equivalence, negation of compound statements, expressing colloquial English symbolically and symbolic expressions colloquially (in a meaningful way).
- Definitions:  $\wedge$ ,  $\vee$ ,  $\neg$ ,  $\Rightarrow$ ,  $\Leftrightarrow$ , contradiction, tautology.

- **Proof Techniques.**

- Topics: Direct proof, proof by contrapositive, proof by contradiction, proof by logical equivalence, the forward-backward method, the choose method, constructive and non-constructive proofs.
- Definitions: Even, odd,  $<$  (in  $\mathbb{R}$ ), divides, prime.