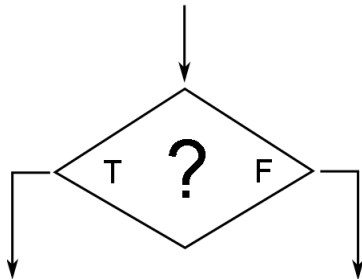# ENGR 1120 Lecture Chapter 4 - Selection Statements
Introduction to Logic

- **What is Logic ? We need to learn some new vocab.**

    - **Types of Sentences (or expressions)**
        * Declarative

        * Exclamatory

        * Interogative

        * Imperative

    - **What is a Logical Expession ?**

    - **a Logical Expession is evaluated as ...**

- **Logical Statments** are used for making *decisions*

  – This may be called *branching* or Selection in programming

  – Previously our programs were all *just a straight line*

  – Solving advanced problems requires more complex Program Flow

- **Relational Operators** and **Logical Expressions**

  – **Relational Operators** combine **numerical expressions** to make **Logical Expressions** .

  – The general form of a **Logical Expression** is shown below.

```
Numerical      Relational      Numerical
Expression      Operator       Expression
```

- **if Statments are used for making *decisions.***

    - if is a reserved keyword . You cannot use it for anything else.

    - end is a also a reserved keyword .

    - The general form of an If statment is shown below.

```
if (condition)

    code

end
```

- **Compound Logical Expressions** and **Logical Operators**

  – Logical Expressions can be combined to make Compound Logical Expressions

  – This is done using **Logical Operators**

  – you are familiar with this idea...

English	Comp. Science	Symbol	MATLAB

- We can represent this idea in a Truth Table.

- We often represent the Program Flow in a Flowchart