- Are encompassing;
Value Education is not merely an academic exercise. It is aim to transforming our consciousness & living. It should be applicable to all dimensions and to all levels of our living.

- Leading to Harmony;
Value education has to enable us to be in harmony within and in harmony with others. It enhance when we live on the basis of these value we start understanding that it will lead to harmony in us & harmony in our interaction with other human / rest of the nature

- The content of value education;
  - Scope of study
    - Any course on value education must include all dimension, — thought, behavior, work and realization.
    - All levels of human beings - Individual, family, society, nature, existance. of human living.

The process of value education;

Next Unit;

DAA

$\Theta(n)$:

Example;

def $f(n) = \frac{1}{2}n^2 - 3n$

$g(n) = n^2$

$\Theta(g(n)) = \Theta(n^2) =$

$\{ f(n) : \exists$ tive const $c_1, c_2, c_3 \ldots 0$

$c_1 n^2 < f(n) < c_2 n^2$

$\forall n > n_0$

$\Theta(n^2) = \{ n^2, n^2+1, 2n^2+4, n^2+2n+6,$

$n^2 - 2n, 2n^2 - 4$

Check $f(n) \in \Theta(n^2)$

$c_1 n^2 < \frac{1}{2}n^2 - 3n < c_2 n^2$

$\forall n > n_0$

if n is large
choose n slightly less
than $\frac{1}{2}$

choose c_2 slightly greater than
$\frac{1}{2}$

O-notation

$f(n) \in O(g(n))$
iff $f(n) \leq c \cdot g(n)$

$f(n) = O(g(n))$

$O(g(n)) = \{ f(n) \mid$ $\exists$ +ive constant c & n_0 s.t. $f(n) \leq c \cdot g(n)$ $\forall\, n \geq n_0$ $\}$

AI

3 missionary and 3 cannibals are on one side of river, along with a boat that can hold one or two persons. Find a way to get every 1 to the other side without ever leaving a group of mercenaries out numbered by caniball.

3M 3C   River   goal

left side	River	Right side
mmm ccc	—	—
mmm c	cc →	cc
mmm cc	← c	c
mmm	cc →	ccc
mmm c	← c	cc

m c	m m →	c c m m
m c c	c ←	c m m
c	m c →	m m m c c
c c	c ←	m m m c
0	c c →	m m m c c c

FMAI

The theory of inference :-

Set of premises $\{H_1, H_2 \ldots H_n\}$

Draw Conclusion C

$\{H_1, \overset{\Sigma}{H_2}, H_3 \ldots H_n\} \vdash C$

$\{H_1, \overset{\Sigma}{H_2}, H_3 \ldots H_n\} \models C$

only Dereivatation

NOT Proof

Rule of inference

Proof

For truth
All the interpretation

Soundness: $\Sigma \vdash C \Rightarrow \Sigma \models C$

If we have a proof → we have assignments

we can make it true

Proof $\Rightarrow$ Truth

Completeness: $\Sigma \models C \Rightarrow \Sigma \vdash C$

Truth $\Rightarrow$ Proof

$\neg, \vee, \wedge, P_1, \ldots P_n, \forall, \exists,$
$\mathbb{N}$

Eg:

H_1 if Canad is a country then Newyork is a city (Q) $P \to Q$

H_2 Newyork is a city (Q)

C: Canad is a country

$\{H_1, H_2, \ldots H_n\} \vdash C$

$H_1 \wedge H_2 \wedge \ldots \wedge H_n \Rightarrow C$ → Tautology

$H_1 : P \to Q$, $H_2 : P$, $C : Q$

P	Q	$P \to Q$	P	Q
0	0	T	F	F
0	1	T	F	T
1	0	F	T	F
1	1	T	T	T

Rules of Inference:

$P \wedge Q \Rightarrow P$ {Simplification}

$P \Rightarrow P \vee Q$ {addition}

$\neg P \Rightarrow P \to Q$

$Q \Rightarrow P \to Q$ vs formulas

$\neg\neg P \Leftrightarrow P$

$P \wedge Q \Leftrightarrow Q \wedge P$

21 Equivalence formulaes.

$P, \{P \to Q\} \Rightarrow Q$

{modus pones}

$\{\neg Q, P \to Q\} \Rightarrow \neg P$ {modus tollens}

$P \to Q, Q \to R \Rightarrow P \to R$