



**Maharashtra Mahavidyalaya  
Nilanga, Dist. Latur**

NAAC Re-Accredited "B" Grade (CGPA - 2.67)

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Affiliated to

**Swami Ramanand Teerth Marathwada  
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**Tutorial Book**

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Name Jadhav Suchita Sukhrāj

Class Bsc Ty

Subject Environment

Semester 5<sup>th</sup> Paper No. \_\_\_\_\_

Title of Tutorial

1) Nuclear Hazards and their adverse effect  
On Human.

2) \_\_\_\_\_

Semester \_\_\_\_\_ Paper No. \_\_\_\_\_

Title of Tutorial

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घटकाचे नाव

1. Nuclear Hazards.
2. Effect of Nuclear Standards
3. Radiation Health Effects
4. Accidents at nuclear power plants and cancer risk.
5. Nuclear Explosions
6. Radiation health basics.
7. Neutrons.

## Nuclear Hazards :-

### Definition :-

Risk or danger to human health or the environment posed by radiation emanating from the atomic nuclei of a given substance or the possibility of an uncontrolled explosion originating from a fusion or fission reaction of atomic nuclei.

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Radioactive pollution is special type of physical pollution which is related to all major life supporting systems like air, water and soil.

Nuclear hazards and incidents generally refer to significant levels of radioactive materials or exposure of workers or the general public to radiation.

\* Types of nuclear hazards :-

1. G.1 Nuclear meltdown
2. G.2 Offsite accidents
3. G.3 Delayed fuel
4. G.4 Transport
5. G.5 equipment failure
6. G.6 Human error
7. G.7 lost source

Exposure to very high levels of radiation such as being close to an atomic bomb can cause acute health effects such as skin burns and acute radiation syndrome (radiation sickness).

It can also result in long term health effects such as cancer and cardiovascular disease.

Cancer induction is the most significant long-term risk of exposure to nuclear warheads.

Approximately 1 out of every 30 people exposed to 1 Gray will die from cancer, in addition to the normal rate of 20 out of 80.

About 1 in 10 people will get cancer, in addition to the typical rate of 16-20 out of 100.

#### \* Effect of nuclear hazards :-

The principal initial effects are blast and radiation.

Blast cause damage to lungs, ruptured eardrums. Collapses structures and causes immediate death or injury.

Thermal Radiation is the heat and light radiation. When a nuclear explosion produces a nuclear fire, skin burns, and flash blindness.

A major environmental concern related to nuclear power is the creation of radioactive wastes such as uranium mill tailings spent (used) reactor fuel & other radioactive and dangerous to human health for thousands of years.

\* Nuclear energy affect human :-

At high doses, ionizing radiation can cause immediate damage to a person's body, including at very high doses radiation sickness and death.

At lower doses, ionizing radiation can cause health effects such as cardiovascular disease and cataracts - as well as cancer.

## \* Radiation health effects :-

### Ionizing radiation :-

Has sufficient energy to affect the atoms in living cells and thereby damage their genetic material (DNA).

Fortunately, the cells in our bodies are extremely efficient at repairing this damage.

However, if the damage is not repaired correctly, a cell may die or eventually become cancerous.

Exposure to low levels of radiation encountered in the environment does not cause immediate health contributor to our overall cancer risk.