1. **Scope:** The Fall Protection Plan of the College of Staten Island applies to all employees working on or near a leading edge that is four feet or more above a lower level.

2. **Policy:** Each employee of the College of Staten Island who is working on or near a surface with an unprotected side or edge and which is four feet or more above a lower level shall be protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest systems.

3. **Responsibilities:**
   
   3.1. **Employees:** All employees of the College of Staten Island are expected to follow the policies and procedures of this document.
   
   3.2. **Supervisors:**
       3.2.1. All supervisors are responsible for ensuring that the employees follow the requirements of the Fall Protection Plan.
       3.2.2. All supervisors are responsible for providing appropriate equipment to employees.
   
   3.3. **Department Directors:** Each Departmental Director is responsible for implementing the procedures and policy requirements of the Fall Protection Plan within their department.
   
   3.4. **Environmental Health & Safety Office:**
       3.4.1. The Director is responsible for conducting training for employees.
       3.4.2. The Director is responsible for updating the Fall Protection Plan.

4. **Definitions:**
   
   4.1. **Anchorage** means a secure point of attachment for lifelines, lanyards or deceleration devices.
   
   4.2. **Body belt (safety belt)** means a strap with means both for securing it about the waist and for attaching it to a lanyard, lifeline, or deceleration device.
4.3. **Body harness** means straps which may be secured about the employee in a manner that will distribute the fall arrest forces over at least the thighs, pelvis, waist, chest and shoulders with means for attaching it to other components of a personal fall arrest system.

4.4. **Buckle** means any device for holding the body belt or body harness closed around the employee's body.

4.5. **Connector** means a device that is used to couple (connect) parts of the personal fall arrest system and positioning device systems together. It may be an independent component of the system, such as a carabiner, or it may be an integral component of part of the system (such as a buckle or dee-ring sewn into a body belt or body harness, or a snap-hook spliced or sewn to a lanyard or self-retracting lanyard).

4.6. **Controlled access zone** (CAZ) means an area in which certain work (e.g., overhand bricklaying) may take place without the use of guardrail systems, personal fall arrest systems, or safety net systems and access to the zone is controlled.

4.7. **Dangerous equipment** means equipment (such as pickling or galvanizing tanks, degreasing units, machinery, electrical equipment, and other units) which, as a result of form or function, may be hazardous to employees who fall onto or into such equipment.

4.8. **Deceleration device** means any mechanism, such as a rope grab, rip-stitch lanyard, specially-woven lanyard, tearing or deforming lanyards, automatic self-retracting lifelines/lanyards, etc., which serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on an employee during fall arrest.

4.9. **Deceleration distance** means the additional vertical distance a falling employee travels, excluding lifeline elongation and free fall distance, before stopping, from the point at which the deceleration device begins to operate. It is measured as the distance between the location of an employee's body belt or body harness attachment point at the moment of activation (at the onset of fall arrest forces) of the deceleration device during a fall, and the location of that attachment point after the employee comes to a full stop.
4.10. **Equivalent** means alternative designs, materials, or methods to protect against a hazard which the employer can demonstrate will provide an equal or greater degree of safety for employees than the methods, materials or designs specified in the standard.

4.11. **Failure** means load refusal, breakage, or separation of component parts. Load refusal is the point where the ultimate strength is exceeded.

4.12. **Free fall** means the act of falling before a personal fall arrest system begins to apply force to arrest the fall.

4.13. **Free fall distance** means the vertical displacement of the fall arrest attachment point on the employee's body belt or body harness between onset of the fall and just before the system begins to apply force to arrest the fall. This distance excludes deceleration distance, and lifeline/lanyard elongation, but includes any deceleration device slide distance or self-retracting lifeline/lanyard extension before they operate and fall arrest forces occur.

4.14. **Guardrail system** means a barrier erected to prevent employees from falling to lower levels.

4.15. **Hole** means a gap or void 2 inches (5.1 cm) or more in its least dimension, in a floor, roof, or other walking/working surface.

4.16. **Infeasible** means that it is impossible to perform the construction work using a conventional fall protection system (i.e., guardrail system, safety net system, or personal fall arrest system) or that it is technologically impossible to use any one of these systems to provide fall protection.

4.17. **Lanyard** means a flexible line of rope, wire rope, or strap that generally has a connector at each end for connecting the body belt or body harness to a deceleration device, lifeline, or anchorage.

4.18. **Leading edge** means the edge of a floor, roof, or form-work for a floor or other walking/working surface (such as the deck) which changes location as additional floor, roof, decking, or form-work sections are placed, formed, or constructed. A leading edge is considered to be an "unprotected side and edge" during periods when it is not actively and continuously under construction.
4.19. **Lifeline** means a component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline), or for connection to anchorage at both ends to stretch horizontally (horizontal lifeline), and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.

4.20. **Low-slope roof** means a roof having a slope less than or equal to 4 in 12 (vertical to horizontal).

4.21. **Lower levels** means those areas or surfaces to which an employee can fall. Such areas or surfaces include, but are not limited to, ground levels, floors, platforms, ramps, runways, excavations, pits, tanks, material, water, equipment, structures, or portions thereof.

4.22. **Mechanical equipment** means all motor or human propelled wheeled equipment used for roofing work, except wheelbarrows and mop carts.

4.23. **Opening** means a gap or void 30 inches (76 cm) or more high and 18 inches (48 cm) or more wide, in a wall or partition, through which employees can fall to a lower level.

4.24. **Personal fall arrest system** means a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, a body belt or body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these. As of January 1, 1998, the use of a body belt for fall arrest is prohibited.

4.25. **Positioning device system** means a body belt or body harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning.

4.26. **Rope grab** means a deceleration device, which travels on a lifeline and automatically, by friction, engages the lifeline and locks so as to arrest the fall of an employee. A rope grab usually employs the principle of inertial locking, cam/level locking, or both.

4.27. **Roof** means the exterior surface on the top of a building. This does not include floors or formwork which, because a building has not been completed, temporarily become the top surface of a building.
4.28. **Roofing work** means the hoisting, storage, application, and removal of roofing materials and equipment, including related insulation, sheet metal, and vapor barrier work, but not including the construction of the roof deck.

4.29. **Safety-monitoring system** means a safety system in which a competent person is responsible for recognizing and warning employees of fall hazards.

4.30. **Self-retracting lifeline/ lanyard** means a deceleration device containing a drum-wound line which can be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and which, after onset of a fall, automatically locks the drum and arrests the fall.

4.31. **Snaphook** means a connector comprised of a hook-shaped member with a normally closed keeper, or similar arrangement, which may be opened to permit the hook to receive an object and, when released, automatically closes to retain the object. As of January 1, 1998, the use of a non-locking snaphook as part of personal fall arrest systems and positioning device systems is prohibited.

4.32. **Toeboard** means a low protective barrier that will prevent the fall of materials and equipment to lower levels and provide protection from falls for personnel.

4.33. **Unprotected sides and edges** means any side or edge (except at entrances to points of access) of a walking/working surface, e.g., floor, roof, ramp, or runway where there is no wall or guardrail system at least 39 inches (1.0 m) high.

4.34. **Walking/working surface** means any surface, whether horizontal or vertical on which an employee walks or works, including, but not limited to, floors, roofs, ramps, bridges, runways, formwork and concrete reinforcing steel but not including ladders, vehicles, or trailers, on which employees must be located in order to perform their job duties.

4.35. **Warning line system** means a barrier erected on a roof to warn employees that they are approaching an unprotected roof side or edge, and which designates an area in which roofing work may take place without the use of guardrail, body belt, or safety net systems to protect employees in the area.
4.36. **Work area** means that portion of a walking/working surface where job duties are being performed.
5. **General Requirements:**

5.1. **Housekeeping:**

5.1.1. All walkways, aisles, passageways, or similar path of travel that is near a leading edge shall be kept clean and orderly and in a sanitary condition.

5.1.2. All walkways, aisles, passageways or similar path of travel that is near a leading edge shall be kept free from protruding nails, splinters, holes, or loose boards.

5.1.3. Where mechanical handling equipment is used, sufficient safe clearances shall be allowed for aisles, at loading docks, through doorways and wherever turns or passage must be made. Aisles and passageways shall be kept clear and in good repairs, with no obstruction across or in aisles that could create a hazard.

5.2. **Guarding Openings in the Wall and Floor:**

5.2.1. A Personal Fall Arrest System, Safety Net, Covers and/or Guardrails shall be provided to protect personnel from the hazards of open pits, tanks, vats, ditches, etc.

5.2.1.1. Roof skylights shall be covered or guarded in a manner approved by the Environmental Health and Safety Director when employees are required to work near said skylights.

5.2.2. Covers, guardrails, toe-boards and safety nets shall be used to protect employees from falling objects.

5.2.2.1. Guardrail systems shall consist of a top rail and mid rail.

5.2.2.1.1. Top edge height of top rail shall be 42 inches.

5.2.2.1.2. Mid rails shall be used between the top edge of the guardrail system and the walking/working surface.

5.2.2.1.3. Guardrail systems shall be capable of withstanding, without failure, a force of at least 200 pounds applied in any outward or downward direction, at any point along the top edge.

5.2.2.2. Toe boards shall be used in conjunction with guardrail systems when material can fall onto workers below.

5.2.2.2.1. The toe board shall be able to withstand 50 pounds of force applied outward.

5.2.2.2.2. The toe board shall be at least 4 inches high, from the top edge of the toe board to the working surface.
5.2.2.2.3. No gap greater than \(\frac{1}{4}\) of an inch shall be allowed between the toe board and the working surface.

5.2.2.3. Wall or floor opening covers shall be marked with the words “DANGER - HOLE” or “DANGER – OPENING”.

5.3. **Personal Fall Arrest Systems:**

5.3.1. Personal fall arrest systems consist of a full body harness, a lanyard, an anchorage point, and appropriate connectors.

5.3.1.1. Body belts are not acceptable as part of a personal fall arrest system.

5.3.1.2. All system components shall be inspected for corrosion, excessive wear, deterioration, etc. prior to use.

5.3.1.3. Any system component that is found to show signs of corrosion, excessive wear, or deterioration shall be removed from service immediately.

5.3.1.4. Any system component that is subjected to arresting an actual fall shall be removed from service.

5.3.2. Other system components such as self-retracting life-lines, horizontal lifelines, etc. shall be approved for use by the Environmental Health and Safety Office prior to use.

5.3.3. Ropes and straps (webbing) used in lanyards, lifelines, and strength components of body belts and body harnesses shall be made from synthetic fibers.

5.3.4. Anchorages used for attachment of personal fall arrest equipment shall be independent of any anchorage being used. (i.e. to support or suspend platforms)

5.3.5. Anchorages used for attachment of personal fall arrest equipment shall be capable of supporting at least 5,000 pounds per employee attached.

5.3.6. Personal fall arrest equipment shall not be used to hoist equipment.

5.4. **Body Positioning Device:**

5.4.1. Body positioning devices, such as a body belt, shall be used in all vehicular aerial lifts.

5.4.2. Such devices shall be rigged such that an employee cannot free fall more than 2 feet.

5.4.3. Such devices shall be secured to an anchorage capable of supporting at least twice the potential impact load of an employee's fall or 3,000 pounds.
5.4.4. All other requirements (such as inspection criteria) for a full body harness are also applicable to the use of the positioning devices.

5.5. **Ladders**:

5.5.1. A-frame stepladders longer than 20 feet shall not be supplied. Stepladders as hereinafter specified shall be of three types:
   - **Type I** - Industrial stepladder, 3 to 20 feet for heavy duty, 250 lb load capacity
   - **Type II** - Commercial stepladder, 3 to 12 feet for medium duty 200 lb load capacity
   - **Type III** - Household stepladder, 3 to 6 feet

5.5.2. Single ladders longer than 30 feet shall not be supplied.

5.5.3. Two-section extension ladders longer than 60 feet shall not be supplied.

5.5.4. Ladders shall be maintained in good condition at all times, the joint between the steps and side rails shall be tight, all hardware and fittings securely attached, and the movable parts shall operate freely without binding or undue play.

5.5.5. All wood ladders shall be free from sharp edges and splinters; sound and free from accepted visual inspection from shake, wane, compression failures, decay, or other irregularities.

5.5.6. Ladders that do not pass the inspection criteria listed above shall be removed from service.

5.5.7. **Ladder Use**:
   - **5.5.7.1.** Single and Two-section ladders shall, where possible, be used at such a pitch that the horizontal distance from the top support to the foot of the ladder is one-quarter of the working length of the ladder.
   - **5.5.7.2.** The ladder shall be so placed as to prevent slipping, or it shall be lashed, or held in position.
   - **5.5.7.3.** Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds.
   - **5.5.7.4.** Ladders designed for use by one employee shall not be used for two employees.
   - **5.5.7.5.** Ladders shall not be placed in front of doors opening toward the ladder unless the door is blocked upon, locked, or guarded;
   - **5.5.7.6.** Ladders shall not be placed on boxes, barrels, or other unstable bases to obtain additional height.
   - **5.5.7.7.** Ladders shall be used in a way that the top two rungs are not used.
5.5.7.8. Ladders shall be used in a way that at any time there are three points of contact between the employee and the ladder, eg. two feet one hand or two hands one foot.