Dutchess Community College

Fall Protection Program

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Purpose:

The purpose of this fall protection program is to establish guidelines to protect all employees engaged in outdoor or indoor work activities that expose them to potential falls from elevations.

Introduction:

This Fall Protection Program is a written document that provides a guideline to ensure compliance with OSHA Standard 29 CFR 1926.500 thru 503. The document shall be used to protect employees on all Dutchess Community College owned or leased facilities who are exposed or engaged in work activities, which expose them to falls from heights of 6 feet or more. This Fall Protection Program has been developed to prevent the occurrence of falls from elevations of 6 feet or higher. This goal will be accomplished through effective education, engineering and administrative controls, use of fall protection systems, and enforcement of the program.

Definitions:

Anchorage means a secure point of attachment for lifelines, lanyards or deceleration devices.

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.

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.

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

Connector means a device which 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).

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.

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.

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.

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.

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.

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

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

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.

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

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.

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.

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

Leading edge means the edge of a floor, roof, or formwork for a floor or other walking/working surface (such as the deck) which changes location as additional floor, roof, decking, or formwork 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.

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 anchorages 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.

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

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.

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

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.

Overhand bricklaying and related work means the process of laying bricks and masonry units such that the surface of the wall to be jointed is on the opposite side of the wall from the mason, requiring the mason to lean over the wall to complete the work. Related work includes mason tending and electrical installation incorporated into the brick wall during the overhand bricklaying process.

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.

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.

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.

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.

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.

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

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.

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. Snaphooks are generally one of two types:

- The locking type with a self-closing, self-locking keeper which remains closed and locked until unlocked and pressed open for connection or disconnection; or
- The non-locking type with a self-closing keeper which remains closed until pressed open for connection or disconnection. 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.

Steep roof means a roof having a slope greater than 4 in 12 (vertical to horizontal).

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.

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.

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.

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.

Work area means that portion of a walking/working surface where job duties are being performed.

Fall Protection Locations:

Fall protection is required wherever the potential to fall 6 feet or more exists. The following are examples of where fall protection would be required. The list is not all inclusive and specific job tasks must be evaluated by a competent person to determine the requirement for use of fall protection equipment:

- All roof locations during roof repair/maintenance.
- All exterior and interior equipment platforms, catwalks, antennas/towers, etc.
- All exterior and interior fixed ladders above 20 feet.
- All mezzanine and balcony edges.
- All open excavations or pits.
- All tasks requiring use of the articulating man lifts. (tree work, electrical work, painting, window cleaning or repair, etc.)
- Scaffolding erection - 10 feet in height or greater.
- Tuckpointing - chimney repair.
- HVAC Roof Unit repair and maintenance when exposed to an unprotected edge.

Note: Fall protection is not needed if an employee or employees are on a low slope roof (less than 4/12 pitch) for **inspection/task evaluation only.**

OSHA Requirements:

1) Employers must determine if walking/working surfaces meet certain requirements. **(29 CFR 1926.501(a)(2))**

Has Dutchess Community College determined if the walking/working surfaces on which employees are working have the strength and structural integrity to support employees safely?

Verify that employees are allowed to work **only** on those surfaces that have the requisite strength and structural integrity.

2) Employees on a walking/working surface must be protected from falling under certain circumstances. **(29 CFR 1926.501(b)(1))**

Verify that each employee on a walking/working surface (horizontal and vertical) with an unprotected side or edge that is 6 ft or more above a lower level is protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest systems.

3) Employees who are constructing leading edges or working nearby must be protected from falling. **(29 CFR 1926.501 (b)(2))**

Verify that each employee who is constructing a leading edge that is 6 ft or more above lower levels is protected from failing by the use of guardrail systems, safety net systems, or personal fall arrest systems.

ALSO: When an employer can demonstrate that it is infeasible or creates a greater hazard to use these systems, the employer must develop and implement a fall protection plan that meets the requirements of 29 CFR 1926.502(k). However, there is a presumption that it is feasible and will not create a greater hazard to implement at least one of the above listed fall protection systems; accordingly, the burden of proof is on the

employer to establish that it is appropriate to implement the fall protection plan only.

Verify that each employee on a walking/working surface 6 ft or more above a lower level where leading edges are under construction, but who is not engaged in the leading edge work, is protected from falling by a guardrail system, safety net system, or personal fall arrest system.

4) Employees in a hoist area must be protected from falling. **(29 CFR 1926.501 (b)(3))**

Verify that each employee in a hoist area is protected from failing 6 ft or more to lower levels by guardrail systems or personal fall arrest systems.

Review work practices to verify that if chains, gates, Guardrail systems, or portions thereof are removed to facilitate the hoist (e.g., during landing of materials), and if an employee must lean through the access opening or out over the edge (e.g., to receive or guide materials), then the employee is protected from fall hazards by a personal fall arrest system.

5) Employees on walking/working surfaces with holes must be protected from falling. **(29 CFR 1926.501 (b)(4))**

Verify that each employee on walking/working surfaces is protected from falling through holes (including skylights) more than 6 ft above lower levels by personal fall arrest systems or covers or Guardrail systems erected over or around such holes.
Verify that each employee on a walking/working surface is protected from tripping in or stepping into or through holes (including skylights) by covers.
Verify that each employee on a walking/working surface is protected from objects falling through holes (including skylights) by covers.

6) Employees on the face of formwork or reinforcing steel must be protected from falling. **(29 CFR 1926.501(b)(5))**

Verify that each employee on the face of formwork or reinforcing steel is protected from falling 6 ft or more to lower levels by personal fall arrest systems, safety net systems, or positioning device systems.

7) Employees on ramps, runways, and other walkways must be protected from falling. **(29 CFR 1926.50(1)(b)(6))**

Verify that each employee on ramps, runways, and other walkways is protected from falling 6 ft or more to lower levels by guardrail systems.

8) Employees at the edge of excavations must be protected from falling. **(29 CFR 1926.501(b)(7))**

Verify that each employee at the edge of excavations 6 ft or more in depth is protected from falling by guardrail systems or fences or, when the excavations are not readily seen because of plant growth or other visual barrier, by barricades.

Verify that each employee at the edge of a well, pit, shaft, and similar excavation 6 ft or more in depth is protected from failing by guardrail systems, fences, barricades, or covers.

9) Employees above dangerous equipment must be protected from failing. **(29 CFR 1926.501 (b)(8))**

Verify that each employee less than 6 ft above dangerous equipment is protected from failing into or onto the equipment by guardrails systems or by equipment guards.

Verify that each employee 6 ft or more above dangerous equipment is protected from fall hazards by guardrail systems, personal fall arrest systems, or safety net systems.

10) Employees performing overhand bricklaying and related work must be protected from falling. **(29 CFR 1926.501 (b)(9))**

Except as provided otherwise in 29 CFR 1926.501(b), verify that each employee performing bricklaying and related work 6 ft

or more above lower levels is protected from failing by guardrail systems, safety net systems, or personal fall arrest systems or that the work is in a controlled access zone (CAZ).

Review work practices to verify that employees reaching more than 10 inches below the level of the walking/working surface on which they are working are protected from falling by a guardrail system, safety net system, or personal fall arrest system.

11) Employees engaged in roofing activities on low slope roofs must be protected from falling. **(29 CFR 1926.501 (b)(10))**

Except as provided otherwise in 29 CFR 1926.501 (b), verify that each employee engaged in roofing activities on low sloped roofs, with unprotected sides and edges 6 ft or more above lower levels is protected from falling, by any of the following:

- **a)** guardrail systems; safety net systems; personal fall arrest systems;
- **b)** a combination of a warning line system and guardrail system;
- **c)** a combination of a warning line system and safety net system;
- **d)** a combination of a warning line system and personal fall arrest system;
- **e)** a combination of a warning line system and safety monitoring system; or
- **f)** a safety monitoring system alone (on roofs 50 ft or less in width only).

12) Employees on a steep roof must be protected from falling. **(29 CFR 1926.501 (b)(11))**

Verify that each employee on a steep roof with unprotected sides and edges 6 ft or more above lower levels is protected from falling by guardrail systems with toe boards, safety net systems, or personal fall arrest systems.

13) Employees engaged in the erection of pre-cast concrete members must be protected from falling. **(29 CFR 1926.501(b)(12))**

Verify that each employee who is engaged in the erection of pre-cast concrete members (including but not limited to the erection of wall panels, columns, beams, and floor and roof "tees") and related operations (such as grouting of pre-cast concrete members) and who is 6 ft or more above lower levels is protected from failing by any of the following (unless 29 CFR 1926.501(b) provides for an alternative fall protection measure):

a) guardrail systems;
b) safety net systems; or
c) personal fall arrest systems.

ALSO: When the employer can demonstrate that it is infeasible or creates a greater hazard to use these systems, the employer can develop and implement a fall protection plan that meets the requirements of 29 CFR 1926.502(k). However, there is a presumption that it is feasible and will not create a greater hazard to implement at least one of the above listed fall protection systems, accordingly, the burden of proof is on the employer to establish that it is appropriate to implement the fall protection plan only.

14) Employees working on, at, above, or near wall openings must be protected from falling. **(29 CFR 1926.501(b)(13))**

If there are wall openings (including those with chutes attached) where the outside
bottom edge of the wall opening is 6 ft or more above lower levels and the inside bottom edge of the wall opening is less than 39 inches above the walking/working surface, then verify that each employee working on, at, above, or near such openings is protected from falling by any of the following:

a) guardrail systems;
b) safety net systems; or
c) personal fall arrest systems.

15) Employers must provide protection from falling objects. **(29 CFR 1926.501 (c))**

Verify that when employees are exposed to failing objects, the employer has each employee wear a hard hat and implements one of the following actions:

a) erects toe boards, screens, or guardrail systems to prevent objects from falling from higher levels;
b) erects a canopy structure and keeps potential falling objects far enough from the edge of the higher level so that objects will not go over the edge if they are accidentally displaced; or
c) barricades the area to which objects could fall, prohibits employees from entering the barricaded area, and keeps objects that may fall far enough away from the edge of the higher level so that those objects will not go over the edge if they are accidentally displaced.

Types of Fall Protection Systems:

- Articulating man lifts provided with a restraint system and full body harness to an engineered anchor point.
- Guardrails with toeboards.
- Personal fall arrest systems.
    - Anchor points (rated at 5,000 pounds).
    - Full body harness.
    - Restraint line or lanyard.
    - Shock absorbing lanyard.
    - Retractable lanyard.
    - Rope grabs.
    - Connectors (self-locking snaphooks).
- Engineered lifelines.
- Warning lines.
- Safety nets.
- Safety monitor systems.

Appropriate fall protection will be determined by the task (job) to be performed.

Duties and Responsibilities:

Authorized Person is the individual engaged in work requiring fall protection: A person approved or assigned by the employer to perform a specific type of duty or duties or to be at a specific location or job site, i.e., building maintenance, road maintenance, roof repair, bridge repair, tree work, HVAC repair, etc., where fall protection is required. Dutchess Community College employees that might be exposed to fall hazards who have completed a fall prevention training program are authorized persons.

- Installation and use of required fall protection equipment.
- Inspection prior to use of full body harness, lanyards/ shock absorbing lanyards, snaphooks, self retracting lanyards, tie off adaptors/anchorages, articulating man lifts and guardrails.
- Proper storage and maintenance of fall protection equipment.

Competent Person is the individual that will identify existing and predictable hazards in the surroundings or working conditions which are hazardous or dangerous to employees and who has the authorization to take prompt corrective action to eliminate them.

The Dutchess Community College Safety Coordinator is the designated competent person.

- Trains employees in all aspects of the fall protection program as outlined in the training section of this documentation.
- Serves as the safety monitor in a safety- monitoring system and is responsible for recognizing hazards that cause falls and warning workers about them.
- Conducts Semi-Annual inspection of all full body harness, lanyards/ shock absorbing lanyards, snaphooks, self retracting lanyards, tie off adaptors/anchorages, documentation will be maintained on file.

- Identifies job tasks to determine the requirement and type of fall protection equipment.

Qualified Person is the individual, who by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated their ability to solve or resolve problem relating to the subject matter, work, or project.

Dutchess Community College will evaluate and contract these services on an as needed basis.

- Supervises design, installation, and use of personal fall-restraint anchorages.
- Supervises design, installation, and use of personal fall-arrest anchorages.
- Supervises design, installation, and use of horizontal lifeline systems to ensure that they can maintain a safety factor of at least two-twice the impact of a worker free-falling 6 feet.

Fall Protection Guidelines – Options:

Engineering Controls

This should always be the first option for selection whenever possible (i.e., light bulb changing, telescoping arm, changing valve, relocate at ground level).

Guardrails

On all projects, only guardrails made from steel, wood, and wire rope will be acceptable. All guardrail systems will comply with the current OSHA Standards (i.e., withstand 200 pounds of force, 42” high, midrail, and toeboard). Examples of where guardrails will be placed if necessary or feasible based on job location or requirements:

- On all open sided floors.
- Around all open excavations or pits.

- On leading edges of roofs or mezzanines.

See Appendix B for guidelines on guardrails

Personal Fall Protection Systems

All employees on any project that will be required to wear a personal fall arrest or restraint system will use the following procedure:

- A full body harness will be used at **all** times.
- **All personal fall arrest systems will be inspected before each use by the employee.** Any deteriorated, bent, damaged, impacted and/or harness showing excessive wear will be removed from service.
- Connectors will be inspected to ensure they are drop forged, pressed, or formed steel or are made of equivalent materials **and** that they have a corrosion resistant finish as well as that all surfaces and edges are smooth to prevent damage to interfacing parts of the system.
- Verify that D rings and snap hooks have a minimum tensile strength of 5,000 lbs and that the D rings and snap hooks are proof tested to a minimum tensile load of 3,600 lbs without cracking, breaking, or taking permanent deformation.
- Only shock absorbing lanyards or retractable lifelines are to be used so as to keep impact forces at a minimum on the body (fall arrest systems).
- Only nylon rope or nylon straps with locking snaphooks are to be used for restraints.
- All lanyards will have self-locking snaphooks.
- Verify that unintentional disengagement of snap hooks is prevented by either of the following means:
    - Snap hooks are a compatible size for the member to which they are connected.
    - Locking type snap hooks are used.

Effective January 1, 1998, only locking type snap hooks may be used. Snap hooks shall not be engaged in the following manners:

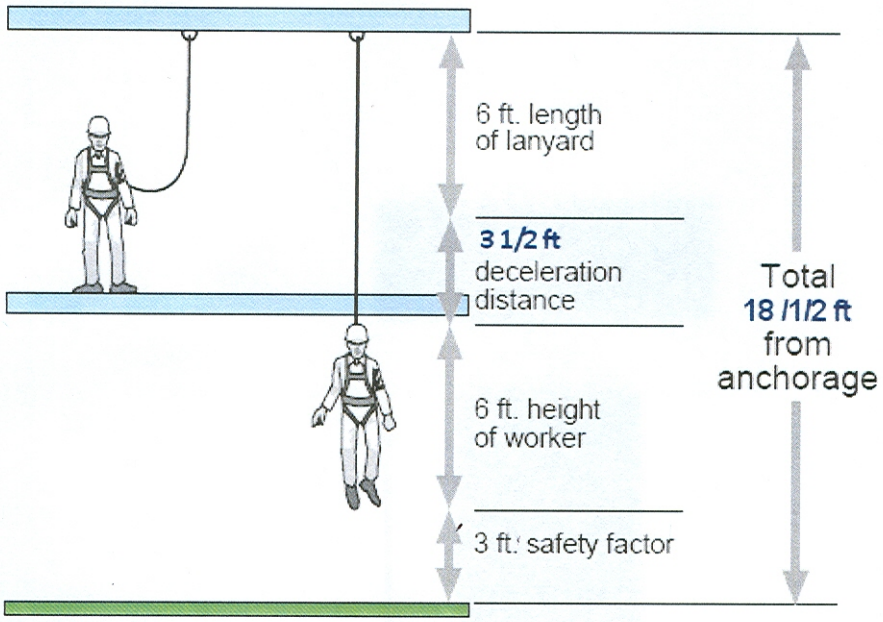
- directly to webbing, rope, or wire rope;
- to each other;
- to a D ring to which another snap hook or other connector is attached; to a horizontal lifeline;
- or to any object that is incompatibly shaped or dimensioned in relation to the snap hook such that unintentional disengagement could occur by the connected object being able to depress the snap hook keeper and release itself.

The maximum free fall distance is not to exceed **6 feet**. Consideration must be given to the total fall distance. The following factors can affect total fall distance:

- Length of connecting means (i.e., lanyard length, use of carabiners, snaphooks, etc.).
- Position and height of anchorage relative to work platform/area (always keep above head whenever possible).
- Position of attachment and D-ring slide on the full body harness.
- Deployment of shock absorber (max 42”).
- Movement in lifeline.
- Initial position of worker before free fall occurs (i.e., sitting, standing, etc.).

Calculating Total Fall Distance

Total Fall Distance is the total length of shock absorbing lanyard + deceleration distance + height of the person + safety factor. (see diagram below)



How to determine total fall distance with a shock-absorbing lanyard.

Engineered Lifeline

Lifeline systems must be designed and approved by an engineer or qualified person.

Lifeline systems must be engineered to have appropriate anchorages, strength of line designed to hold X number of individuals connected to it, line strength to aid in the arrest of a fall, and durability to hold a fallen employee(s) suspended until rescue can occur.

See Appendix C for guidelines on lifelines.

Warning Line System

All greater than 50 feet wide flat roof (i.e., roof with less than 4/12 slope) work which is performed 6 feet or further back from the edge of the roof can be completed by installing a Warning Line and using a safety monitor. If the roof is flat and less than 50 feet wide, a competent person safety monitor may be used. Warning Lines will consist of the following:

- Will be erected 6 feet from the edge of the roof.
- Be constructed of stationary posts made of wood or metal.
- Wire or nylon rope and "Caution" tape will be strung from post to post and must be able to withstand 16 pounds of force.
- The entire perimeter of the roof where work is being performed will be guarded by the warning line.

If an employee must access an area within 6 feet of the roof for reasons *other than* exiting the roof via a ladder or fixed industrial ladder, another employee must monitor that individual and warn him/her of any dangers. If another employee is not available to act as a safety monitor, then the employee must don a full body harness and attach a fall restraint lanyard to an anchor point to prevent reaching the edge of the roof.

Inspection of Fall Protection Systems:

The following criteria will be utilized to maintain all equipment in good working condition.

Full Body Harnesses

- Inspect before each use.
    - Closely examine all of the nylon webbing to ensure there are no burn marks, which could weaken the material.
    - Verify there are no torn, frayed, broken fibers, pulled stitches, or frayed edges anywhere on the harness.
    - Examine D-ring for excessive wear, pits, deterioration, or cracks.

- Verify that buckles are not deformed, cracked, and will operate correctly.
- Check to see that all grommets (if present) are secure and not deformed from abuse or a fall.
- Harness should never have additional punched holes
- All rivets should be tight, not deformed.
- Check tongue/straps for excessive wear from repeated buckling.

♦ Semi-Annual inspection of all harnesses will be completed by a *competent person*,
♦ documentation will be maintained on file.
♦ Storage shall be such as to protect from damage.
♦ All harnesses that are involved in a fall will be destroyed.

Lanyards/Shock Absorbing Lanyards:

♦ Inspect before each use.

- Check lanyard material for cuts, burns, abrasions, kinks, knots, broken stitches and excessive wear.
- Inspect the snaphooks for hook, locks, and eye distortion.
- Check carabiner for excessive wear, distortion, and lock operation.
- Ensure that all locking mechanisms seat and lock properly.
- Once locked, locking mechanism should prevent hook from opening.
- Visually inspect shock absorber for any signs of damage, paying close attention to where the shock absorber attaches to the lanyard.
- Verify that points where the lanyard attaches to the snaphooks are free of defects.

♦ Semi-Annual inspection of all lanyards will be completed by a competent person, documentation will be maintained.
♦ Storage shall be such as to protect from damage.
♦ All lanyards that are involved in a fall will be destroyed.

Snaphooks:

- ♦ Inspect before each use.

    - Inspect snaphook for any hook and eye distortions.
    - Verify there are no cracks, pitted surfaces, or eye distortions.
    - The keeper latch should not be bent, distorted, or obstructed.
    - Verify that the keeper latch seats into the nose without binding.
    - Verify that the keeper spring securely closes the keeper latch.
    - Test the locking mechanism to verify that the keeper latch locks properly.

- ♦ Semi-Annual inspection of all snaphooks will be completed by a competent person, documentation will be maintained.
- ♦ All snaphooks involved in a fall will be destroyed.

Self-Retracting Lifeliness

- ♦ Inspect before each use.

    - Visually inspect the body to ensure there is no physical damage to the body.
    - Make sure all back nuts or rivets are tight.
    - Make sure the entire length of the nylon strap is free of any cuts, burns, abrasions, kinks, knots, broken stitches, or excessive wear and retracts freely.
    - Test the unit by pulling sharply on the lifeline to verify that the locking mechanism is operating correctly.
    - If manufacturer requires, make certain the retractable lifeline is returned to the manufacturer for scheduled inspections.

- ♦ Semi-Annual inspection will be conducted by a competent person with documentation maintained.
- ♦ Service per manufacturer specifications (1-2 years).

- Inspect for proper function after every fall.

Tie-off Adaptors/Anchorages

- Inspect for integrity and attachment to solid surface.
- Semi-Annual inspection of all tie-offs and anchorages by a competent person with documentation.
- All tie-offs and anchorages will be destroyed and replaced after a fall.

Articulating Man Lift

- Inspect before each use.
- Inspect/service per manufacturer guidelines. Scissors lifts and safety nets will be inspected at the beginning of each shift when in use.

Horizontal Lifelines

- Inspect before each use for structural integrity of line and anchors.
- Semi-Annual inspection by competent person.

Note: Horizontal Lifelines have not been purchased and are not in use at the present time.

Guardrails

- Temporary systems - Daily visual inspection will be completed by a competent person.
- Temporary systems - Weekly, a complete structural inspection will be completed by a competent person.
- Permanent Systems - Annual structural inspection will be completed by a competent person with future frequency of inspection defined based on conditions/controls present.

Storage and Maintenance of Fall Protection Equipment:

- Never store the personal fall arrest equipment in the bottom of a tool box, on the ground, or outside exposed to the elements (i.e., sun, rain, snow, etc.).
- If possible, hang equipment in a cool dry location in a manner that retains its shape.
- Always follow manufacturer recommendations for inspection.
- Clean with a mild, nonabrasive soap, and hang to dry.
- Never force dry or use strong detergents in cleaning.
- Never store equipment near excessive heat, chemicals, moisture, or sunlight.
- Never store in an area with exposures to fumes or corrosives elements.
- Avoid dirt and build-up on equipment.
- Never use this equipment for any purpose other than personal fall arrest.
- Once exposed to a fall, remove equipment from service immediately.

Training:

Dutchess Community College will provide a fall prevention training program for each employee who might be exposed to fall hazards. Training materials will be reviewed to verify that each employee has been trained, as necessary, by a competent person qualified in the following areas:

- the nature of fall hazards in the work area;
- the ability to recognize a fall hazard and to determine when fall protection is required.
- the use and operation of guardrail systems, personal fall arrest systems, warning line systems, safety monitoring systems, controlled access zones, and other protection to be used;
- the role of each employee in the safety monitoring system when this system is used;
- the role of employees in fall protection plans;

- the requirements contained in 29 CFR 1926 Subpart M.
- understanding and following all components of this fall protection program and
- identifying the enforceable OSHA standards and ANSI standards that pertain to fall prevention.

Dutchess Community College will maintain a written certification record for employee training. The record must contain the following information:

- the name or other identity of the employee trained
- the date(s) of the training; and
- the signature of the person who conducted the training or the signature of the employer.

When the employer has reason to believe that any affected employee who has already been trained does not have the understanding and skill required by 29 CFR 1926.503(a), the employer must retrain that employee. Retraining is required at least in the following circumstances:

- when changes in the workplace render previous training obsolete;
- when changes in the types of fall protection systems or equipment to be used render previous training obsolete; or
- when inadequacies in an affected employee's knowledge or use of fall protection systems or equipment indicate that the employee has not retained the requisite understanding or skill.

Rescue Procedures:

Rescue Methods/Options of Fallen Personnel

In the unlikely event that a fall arrest occurs, all employees will be rescued by on-site personnel with the use of ladders where feasible. Alternate rescue would be through the local emergency services.

Communication Issues

In the event of a fall, the following people will be notified as soon as possible:

- Personnel on the scene call College Security Office at extension 4911 or 8070 (845-431-8070) via cell phone-Immediately Request Emergency Services: Fairview Fire Department
- Supervisor/Management in charge of work crew-As soon as possible

At the beginning of any work activity where fall protection is an issue, *rescue plans must be identified* and discussed with all employees in case of a fall. The supervisor on site will develop the rescue plan(s).

Fall Investigation:

All fall investigations will be conducted by the appropriate supervisor in coordination with management. The results of the investigation shall be documented and the Fall Protection Program shall be reviewed and amended if the investigation warrants a change to the program.

Program Evaluation:

This fall protection program will be evaluated periodically to determine effectiveness. The following criteria will be used to evaluate its performance:

- Accident reports, number of accidents.
- Management/staff compliance with program components.
- Periodic on-site audits.
- Staff feedback, interviews.

Contractors:

All outside contractors working in or on the premises of (Dutchess Community College owned or leased property) will be required to follow the guidelines set forth in the OSHA Code of Federal Regulations 1926 Sub Part M- Fall Protection.

APPENDIX A

OSHA GUIDELINES ON GUARDRAILS - 29 CFR 1926.502(b)

Verify that the top edge of top rails or equivalent guardrail system members is 42 inches ± 3 inches above the walking/working level. When conditions warrant, the height of the top edge may exceed the 45inch limit, provided the guardrail system meets all other criteria.

ALSO: When employees are using stilts, the height of the top edge of the top rail or equivalent member must be increased an amount equal to the height of the stilts. Verify that mid rails, screens, mesh, intermediate vertical members, or equivalent intermediate structural members are installed between the top edge of the guardrail system and the walking/working, surface when there is no wall or parapet wall at least 21 inches high. Mid rails and other intermediate structural members must meet the following requirements:

1) When used, mid rails must be installed midway between the top edge of the guardrail system and the walking/working level.

2) When used, screens and mesh must extend from the top rail to the walking,/working level and along the entire opening between top rail supports.

3) When used between posts, intermediate members (such as balusters) must be not more than 19 inches apart.

4) Other structural members (such as additional mid rails and architectural panels) must be installed such that there are no openings in the guardrail system that are more than 19 inches wide.

5) Verify that all Guardrail systems are capable of withstanding, without failure, a force of at least 200 lbs applied within 2 inches of the top edge, in any outward or downward direction, at any point along the top edge.

6) Verify that when the 200 lb test load is applied in a downward direction, the top edge of the guardrail does not deflect to a height less than 39 inches above the walking/working level. (Guardrail system components selected and constructed in accordance with Appendix B to 29 CFR 1926 Subpart M meet this requirement.)

7) Verify that mid rails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members are capable of withstanding, without failure, a force of at least 150 lbs applied in any downward or outward direction at any point along the mid rail or other member.

8) Verify that guardrail systems are surfaced to prevent injury to an employee from punctures or lacerations and to prevent snagging of clothing.

9) Verify that the ends of all top rails and mid rails do not overhang the terminal posts.

10) Verify that steel banding and plastic banding are not used as top rails or mid rails.

11) Verify that manila, plastic, or synthetic rope being used for top rails or mid rails is inspected as frequently as necessary to verify that it continues to meet the strength requirements of 29 CFR 1926.502(b)(3).

12) Verify that top rails and mid rails are at least 0.25 inch nominal diameter or 0.25 inch thick to prevent cuts and lacerations.

13) If wire rope is used for top rails, verify that it is flagged at not more than 6ft intervals with high visibility material.

14) When guardrail systems are used at hoisting areas, verify that a chain, gate, or removable Guardrail section is placed across the access opening between guardrail sections when hoisting operations are not taking place.

15) When guardrail systems are used at holes, verify that they are erected on all unprotected sides or edges of the hole.

16) When guardrail systems are used around holes used for the passage of materials, verify that the hole has not more than two sides provided with removable Guardrail sections to allow the passage of materials. When the hole is not in use, it must be closed over with a cover or a guardrail system must be provided along all unprotected sides or edges.

17) When Guardrail systems are used around holes that are used as points of access (such as ladder ways), verify that they are provided with a gate, or are so offset that a person cannot walk directly into the hole.

18) Verify that Guardrail systems used on ramps and runways are erected along each unprotected side or edge.

APPENDIX B

Lifeline Requirements - 29 CFR 1926.502(d)(7) to (d)(14)

1) Verify that on suspended scaffolds or similar work platforms with horizontal lifelines that may become vertical lifelines, the devices used to connect to a horizontal lifeline are capable of locking in both directions on the lifeline.

2) Verify that horizontal lifelines are designed, installed, and used under the supervision of a qualified person as part of a complete personal fall arrest system that maintains a safety factor of at least 2.

3) Verify that lanyards and vertical lifelines have a minimum breaking strength of 5,000 lbs.

4) Verify that when vertical lifelines are used, each employee is attached to a separate lifeline.

5) Verify that self retracting lifelines and lanyards that automatically limit free fall distance to 2 ft or less are capable of sustaining a minimum tensile load of 3,000 lbs applied to the device with the lifeline or lanyard in the fully extended position.

6) Verify that self retracting lifelines and lanyards that do not limit free fall distance to 2 ft or less, rip stitch lanyards, and tearing and deforming lanyards are capable of sustaining a minimum tensile load of 5,000 lbs applied to the device with the lifeline or lanyard in the fully extended position.

7) Verify that ropes and straps (webbing) used in lanyards, lifelines, and strength components of body belts and body harnesses are made from synthetic fibers.

APPENDIX C

Fall Protective Training Documentation Form

Date_____

Instructor_____ **Title**_____

Contact Information_____ **Department**_____

The following employees have been trained to recognize fall hazards and to use appropriate fall protection systems and methods to minimize exposure to the hazards.

Employee Name (Print)	Title	Employee Signature
1._____	_____	_____
2._____	_____	_____
3._____	_____	_____
4._____	_____	_____
5._____	_____	_____
6._____	_____	_____
7._____	_____	_____
8._____	_____	_____
9._____	_____	_____
10._____	_____	_____
11._____	_____	_____
12._____	_____	_____
13._____	_____	_____
14._____	_____	_____
15._____	_____	_____