

# Plumbing and Heating Systems

HM101 January 17, 2007

Jack Narcotta

MIT Dept of Facilities, Master Plumber  
Supervisor of Plumbing Team

# Overview

- Safety
- Plumbing: sanitary and storm drains
- Domestic water
- Natural Gas
- Steam and hot water heating
  - Gas
  - Oil
  - High pressure steam

# Safety

- Emergency shutoffs
- Typical locations for shutoff valves
- Gas
- Water: hot and cold
- Steam and hot water systems and boilers
- Flooded basements
- Electrical issues

# Plumbing Systems

- Sanitary gravity systems
- Ejector pumps
- Grease traps
- Macerating pumps (new system)
- Storm drain and roof drains
- Qualified person for service & installations

# Domestic Water

- Hot water heaters
  - Gas
  - Oil
  - Steam
- Back flow preventers
- Qualified person for service & installation

# Natural Gas

- Low pressure residential <0.5 psi
  - Sizing and piping
- Venting: CO/CO<sub>2</sub> danger
- High pressure >0.5 psi
- Qualified person for service & installation

# Heating Systems

- Steam system operation
- One pipe / two pipe
- Steam traps
  - What they are
  - How they work
  - Service
- Valves: manual and automatic
- Thermostats and boiler controls
  - Gas/oil system operation

# Heating Hot Water Systems

- Boiler operation: gas/oil/steam
- Piping tips
- Venting: very important
- Radiators and baseboard radiation
- Valves: manual & automatic
- Thermostats & boiler controls
  - System operation