

# NOCTI

NOCTI  
500 N Bronson Avenue  
Big Rapids, MI 49307-9036  
800.334.6283 Ext 219  
[www.nocti.org](http://www.nocti.org)

## Instructor Prep Pack

Pilot Testing 2025  
Equipment, Materials, and  
Supplies

# ***ADDITIVE MANUFACTURING ESSENTIALS (NOCTI-AMERICA MAKES) - PILOT (9116)***

## **JOB 1: SLICER SOFTWARE SET-UP (30 minutes)**

- Computer workstation with design software and slicing software installed and up-to-date, familiar to the participant
- Design file (CAD, Tinkercad, or other similar tool) for object to be printed – Download the free file for #3DBenchy boat from Thingiverse (3DBenchy.com/download)
- Slicing software (can use whatever the participant is familiar with, such as Cura.) Should have layer-by-layer print preview capabilities
- SD card or USB drive (or equivalent) to transfer the file from the computer to the 3D printer – one per participant
- Provide spools of filament of these three materials (only one is the correct choice):
  1. Basic PLA
  2. Flexible TPU
  3. PETG
- Provide build plate and extruder temperature information for the three material options
- **NOTE: The participant will NOT print the object**

## **SET-UP INSTRUCTIONS FOR INSTRUCTOR:**

As part of the set-up, the instructor provides a design that has been downloaded for free from Thingiverse. This file is available on the computer workstation for the participant.



[3DBenchy.com/download](https://3DBenchy.com/download)

## ***ADDITIVE MANUFACTURING ESSENTIALS (NOCTI-AMERICA MAKES) - PILOT (9116) (continued)***

### **JOB 2: 3D PRINTER HARDWARE SET-UP (30 minutes)**

- Safety equipment: Safety glasses
- Sliced file (STL file) for printing on storage media (USB or SD card to fit the 3D Printer) From Job 1: Slicer Software Set-Up (provided by instructor for participants unable to complete Slicer job)
- Material: Spool of 1.75- or 2.85-mm material Basic PLA; Only need Basic PLA (chosen in previous job)
- Adhesive - Glue stick
- 3D Printer with SD card or USB capability (**will not actually print the object**) for participant to use for tasks – Should have ability to change settings
- Cleaner for build plate (IPA)
- Cleaner for nozzle
- **NOTE: Participant will NOT print the object**

### **SET-UP INSTRUCTIONS FOR INSTRUCTOR:**

Provide a sliced file (STL file) for printing (based on the software job) on storage media (USB or SD card to fit 3D Printer) for participants unable to successfully complete Job 1: Slicer Software Set-Up.

### **JOB 3: CREATE A 3D SOLID MODEL DRAWING (30 minutes)**

- CAD workstation (CAD system software familiar to the participant and computer system)
- Plotter/printer
- Storage media (USB drive or similar)
- Scale (to use when evaluating the drawing)
- Paper
- Pencil

### **JOB 4: TROUBLESHOOT 3D PRINTING PROJECTS (20 minutes)**

- Five Photos of 3D printing projects with issues – provided in Participant Booklet
- Chart in Participant Booklet where they record the issue and suggest remedy/correction
- Pen or pencil to record answers in the chart

## **BIOTECHNOLOGY - PILOT (4275)**

**NOTE:** Participants will be required to demonstrate complete glove technique at the beginning and end of the job.

**Designate area for used materials for job prior to testing.**

**Ensure student's workstation is as private as possible.**

### **JOB 1: MAKING A SERIAL DILUTION (25 minutes)**

- Gloves, eye protection, lab coat or scrubs
- 5x 15 ml conical tubes per student:
  - a. 1x 15mL conical tube containing 10ml of a colored stock solution
  - b. 4x 15mL conical tubes for student dilution
- 250 ml of dH<sub>2</sub>O
- Food coloring
- Choose:
  - a. P1000 and P1000 tips and/or
  - b. (5x) 5 mL and 10 mL serological pipettes and pipette pump
- Lab marker at each workstation
- Calculator
- Test tube rack
- Scratch paper and writing instrument
- Waste container

## COMPUTER NETWORKING FUNDAMENTALS - PILOT (4714)

**NOTE: All equipment for this performance assessment must be tested and in proper working condition (unless otherwise stated) prior to the testing date.**

**A disconnected private network should be used for this performance assessment. Evaluator will need to set up the local network ahead of time and make Kiosk 1 fully functional and connected. Instructor or Evaluator will need to assign IP addresses before participants begin assessment.**

### **JOB 1: SET UP A SIMPLE LAN WITH TWO WORKSTATIONS AND HARDWARE INSTALLATION (1 hour)**

Each participant will require TWO workstations for this job.

- **For each job, start with a fresh install of an Operating System.**
- **Kiosk #1 must be pre-configured.**
- **Workstation #X must have a NIC that is not functioning.**
- **Disable onboard NIC device or remove failed NIC in workstation #X**
- **A copy of the NIC driver needs to be available in case the participant needs to reinstall the driver.**
- **USB NICs are not permitted**

For each participant:

- Two PC workstations, with networkable operating systems, labeled Kiosk #1 and Workstation #X, with field-replaceable unit (FRU) NICs
- One standby unit for every 2 participants (in case of test unit failure)
- The NIC in Kiosk #1 is correctly configured
- The NIC in Workstation #X needs to be non-functioning
- Copies of the proper NIC drivers and
- Two (correctly terminated) Cat-5 or newer straight-through cables
- An Ethernet switch/router with minimum number of ports to support the participants (at 4- or 8-port) with appropriate AC adaptor
- NIC Adapter (PCI or PCI-E)
- Workstations booted, ready, and logged on with administrative access
- Screwdriver
- ESD safety strap or mat
- Nitrile or latex gloves
- LAN cables
- Writing utensils
- Paper

## **COMPUTER NETWORKING FUNDAMENTALS - PILOT (4714) (continued)**

### **JOB 2: MAKING AND TESTING CABLES (35 minutes)**

- 6 ft. CAT-5/6 cable (Riser and Plenum cable) per participant
- 2 – RJ-45 passthrough style terminals per participant
- RJ-45 EZ style crimpers per participant
- Continuity tester (ex. Fluke)
- Wire strippers/cutters
- Cable labels
- Cable labeler or pens for marking
- Premade cables (4 total)
  - 2 – straight through (1 good, 1 bad)
  - 2 – crossover (1 good, 1 bad)

Must have CAT-5/6 cables and RJ-45 EZ style terminals available for student use if student is unable to make cable correctly.

## ***DENTAL ASSISTING - PILOT (4326)***

### **PROCEDURE 1: TREAT A CONTAMINATED TRAY AND PREPARE INSTRUMENTS FOR STERILIZATION (10 minutes)**

- Sink
- Hand soap/Hand sanitizer
- Personal protective equipment:
  - utility gloves
  - mask
  - gown
  - safety glasses
- Instruments for autoclave
  - basic setup (mouth mirror, explorer, cotton pliers)
  - high speed handpiece
- Ultrasonic and solution
- Autoclave/Nyclave bags/Autoclave wrap
- Autoclave tape
- Pencil or pen
- Paper towels
- Waste container
- Gauze (made to appear contaminated with blood)
- Other disposable items
- Biohazard bag

### **PROCEDURE 2: ORAL HYGIENE INSTRUCTIONS (10 minutes)**

- Toothbrush
- Floss
- Typodont

### **PROCEDURE 3: MIXING IRM (20 minutes)**

- Personal protective equipment:
  - lab coat
  - mask
  - goggles
  - gloves
- IRM
- Mixing pad
- Spatula

## ***DENTAL ASSISTING - PILOT (4326) (continued)***

### **PROCEDURE 4: ASSEMBLE AND DISASSEMBLE ASPIRATING SYRINGE (10 minutes)**

- Sink
- Hand soap/Hand sanitizer
- Personal protective equipment:
  - gloves
  - mask
  - gown/lab coat
  - safety glasses
- Sharps container
- Aspirating syringe
- Disposable needles (long and short)
- Anesthetic cartridge
- Paper barrier
- Waste container

### **PROCEDURE 5: TAKE AN IMPRESSION (20 minutes)**

- Sink
- Hand soap/Hand sanitizer
- Personal protective equipment:
  - gloves
  - mask
  - gown/lab coat
  - safety glasses
- Flexible rubber bowl
- Appropriate spatula
- Typodont
- Alginate powder (regular or fast-set)
- Water measurement tool supplied by manufacturer
- Measuring scoop supplied by manufacturer
- Mandibular impression tray
- Maxillary impression tray
- Room temperature water
- Paper towels or other products for placing impressions
- Disinfectant spray
- Waste container



## ***DENTAL ASSISTING - PILOT (4326) (continued)***

### **PROCEDURE 6: PREPARE A CLASS III (ANTERIOR) COMPOSITE TRAY (10 minutes)**

- Mirror
- Explorer
- Cotton pliers
- Spoon excavator
- Liner placement instrument
- Mylar strip/wedge
- Etching gel
- Bonding agent
- Bonding brush
- Bonding well
- Composite material/composite gun
- Composite placement instrument
- Articulating paper holder and paper
- Assortment of instruments that are not applicable for this procedure

### **PROCEDURE 7: POSITION HVE AND AIR WATER SYRINGE AND TRANSFER INSTRUMENTS (20 minutes)**

Tray set up in a dental unit setting:

- HVE
- Air Water syringe
- Typodont
- Mirror
- Explorer
- Condenser
- Burnisher
- Hemostat or scissors
- Personal protective equipment
  - gloves
  - mask
  - gown/lab coat
  - safety glasses

### **PROCEDURE 8: ASSEMBLE XCP (10 minutes)**

Positioning instruments:

- anterior
- posterior
- bitewing