

Who should attend?

This course is designed for those that work with or in a microbiology food laboratory. It provides an interactive slide lecture portion with hands on training in the laboratory. This course would benefit:

- Food lab technicians
- Microbiology Interns
- Lab management personnel
- Quality Assurance Personnel
- Anyone interested in learning new information or needing a microbiology refresher course.

What is Food Microbiology 101?

The focus of Food Microbiology on the detection and analysis of foodborne spoilage microorganisms: How we identify and culture them, how they live, how some infect and cause disease and how we can make use of their activities.

Microorganisms are tiny, mostly one-celled organisms capable of rapid reproduction under proper growth conditions. Those microorganisms important in the food industry include the bacteria, viruses, yeasts, molds, and protozoans.

Many are helpful and serve useful functions such as causing breads to rise, fermenting sugars to alcohol, assisting in the production of cheese from milk and decaying organic matter to replenish nutrients in the soil.

Microorganisms can also cause foods to spoil and make them inedible. Spoilage organisms cost the food industry millions of dollars each year. Microorganisms can also be harmful. These are called *pathogens* and cause 24-81 million cases of foodborne illnesses in the U.S. each year.

Text Book

Each attendee will receive a copy of: Food and Microbiology; An Introduction, 2nd Edition, by Thomas J. Montville and Karl R. Matthews.

On Site Training

Training at your site and for your department is available to accommodate your schedule. For further information, call 800-261-7465 e-mail twelles@northlandlabs.com

Schedule

8:00 Registration and Breakfast
8:30 Classroom
10:00 Break
10:15 Classroom
11:45 Lunch
12:30 Laboratory
2:00 Break
2:15 Laboratory
3:30 Conclusion

Workshop Agenda

- Overview of Microbiology
- Description of Bacteria
 - Gram Staining
 - Gram Negative Bacteria
 - Gram Positive Bacteria
 - Rods vs. Cocci
 - Aerobic vs. Anaerobic
 - Facultative
 - Spores vs. Vegetative
- Routes of Contamination
 - Raw materials
 - Environment
 - Employees
- Factors Influencing Microbial Growth
 - pH
 - Water activity
 - Nutrients
 - Antimicrobials and preservatives
 - Storage conditions and abuse
- Food Safety
- Foodborne Illnesses
- Pathogens
- *E. coli*
- *Listeria*
- *Pseudomonas aeruginosa*
- *Salmonella*
- *Shigella*
- *Staphylococcus aureus*
- Indicator Tests
- Spoilage Bacteria
- Plate Examples
- QC and Aseptic Sampling
- Challenge Studies vs. Shelf Life Studies
- Hands-on in Laboratory

Registration Form

Microbiology 101

- July 15, 2009 Northbrook, IL
- July 22, 2009 Green Bay, WI

First and last name

Job title

Company/Institution

Address

City, State, Zip Code

Telephone

E-mail address

Pay by check made out to: Northland Laboratories

Credit Card – MasterCard, Visa or Discover

Card number and 3 digit security code

Card Holder Name

Expiration date

Signature

General Information

Early Registration – Must be registered no later than June 24, 2009 (for July 15, 2009 workshop) or July 1, 2009 (for July 22 workshop)

\$395.00(Save \$100)

Group Early Registration – 2 or more people from same company
\$345.00 each

Regular Registration –
\$495.00

Group Regular Registration -
\$445.00 each

Cancellations are subject to a \$150.00 processing fee. Applicants may cancel one week prior to the course start date for a refund. If less than one week a credit of \$150.00 will be issued for the next course.

Substitutions from individuals of the same company are permitted at any time.

Confirmation: All registrations will be confirmed by e-mail or by phone.

Register by:

Phone: 800-261-7465

Fax: 920-336-0647

E-mail: twelles@northlandlabs.com

Mail: Northland Laboratories
1044 Parkview Road
Green Bay, WI 54304

Register by June 24, 2009 and SAVE \$100

NORTHLAND
Laboratories The Right Partnership for Quality Assurance
and Research & Development Professionals

Microbiology 101 Workshop

For those interested in learning more about basic microbiology or refreshing your microbiology knowledge

July 15, 2009 in Northbrook, IL
July 22, 2009 in Green Bay, WI

An introductory microbiology workshop for lab personnel wanting to learn new skills, update current skills and lab professionals, a refresher course on basic food microbiology with hands-on in the laboratory.