

Hillsborough County Extension Service
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Tree & Landscape Short Course

Mark this date on your calendar:
Feb 22, 2002. That's the date of the next **Tree & Landscape Short Course.** This year the event will take place at the Florida State Fairground in the Entertainment Hall.

The Short Course is an all-day (8:30am - 3pm) seminar highlighting various areas of horticulture. FCNP CEU's will be available. **Last year nearly 500 attended.**

This year's lineup includes:

Chuck Lippe - an Extension Director from the east coast will talk about the relationship between tree fertilization and the natural defense mechanisms. You might think differently about fertilization after this presentation.

Dr Ed Barnard, a forest pathologist, will discuss the effects of the long-term drought on Florida trees.

Dr Tim Broschat will present some of his recent research on palm tree fertilization. The way you fertilize might actually be harming your palms.

Nelda Metheny, noted author and speaker will talk about recycled water - what it is, what effect it has on landscapes and some suggestions on how to manage landscapes that use recycled water. For registration & details, see the website:

<http://prohort.ifas.ufl.edu/index.htm>

Less Lawn - By Law?

As this issue was being written, the City of Tampa was in the midst of developing an ordinance that would require smaller lawns for new homes. As the ordinance is currently written, it would limit irrigated turf to 50% of the area of a residential lot not covered by the house, driveway, sidewalks or pool. The other 50% would be required to use low-volume irrigation systems, usually called micro-irrigation. Inspectors that usually inspect the irrigation system would review the irrigation plans and the coverage.

Meetings will be held shortly for public comment. In February, the plan will be considered by the City Council. The language of this ordinance is not locked in as it is only a proposal at this stage. If approved, the ordinance will affect only new construction. (Source: *Tampa Tribune*, Dec 10, 2001)

Spanish Language Resources

The **Associated Landscape Contractors Association (ALCA)** recently announced that the Certified Landscape Technician -Interior exam is now available in Spanish. (Source: <http://commerce.infosrc.com/docdelivery/alca/ProcessAddUser.cfm>)

Workplace Language.com has announced a new job aid for translating between English and Spanish. The product, essentially a laminated folding card, contains general horticulture terms along with courtesy, safety, time, weather and other topics. For more information see the website at www.workplacelanguage.com

New Pesticide License

A new pesticide certification is officially available. The Natural Areas Weed Management certificate is designed for those who apply herbicides to control invasive vegetation in natural areas of Florida. A new training manual has been created for this certification. The 46-page, full-color publication, **Natural Area Weed Management**, is now available from UF's Institute of Food and Agricultural Sciences. The manual contains information on herbicide application and safety in natural areas, said Ken Langeland, professor of agronomy and author of the publication. He said the manual is one of two publications recommended for those seeking certification and licensing by the Florida Department of Agriculture and Consumer Services. Priced at \$12, the manual contains valuable information, photographs, tables and charts. "The second manual, **Identification and Biology of Non-Native Plants Found in Florida's Natural Areas**, is recommended for identifying invasive plants," Langeland said. "The two manuals, developed as study guides for those seeking state certification, also are useful resources for land managers and others with an interest in identifying and managing invasive plants." Both publications are available through the UF/IFAS-Extension bookstore, PO Box 110011, Gainesville, Fla. 32611-0011. Call (352) 392-1764 to order the book. Make checks payable to the University of Florida. School purchase orders are also accepted. For credit card orders, call (800) 226-1764.

Business news

- A quiet yet potentially significant partnership has emerged between **ServiceMaster** and **Home Depot**. Home Depot, the world's largest home improvement retailer, announced on November 27, 2001, that it is teaming up with The ServiceMaster Company, the nation's leading provider of home services, to test the sales of a wide range of co-branded residential maintenance and repair services to its retail

customer base. A 6 month test program has been initiated to allow consumers to purchase lawn care services when they walk into a Home Depot store. These services will be offered in 30 stores in 3 cities. The cities have yet to be announced. Additional services to be offered during the project will be termite and pest control services through ServiceMaster's Terminex division. ServiceMaster is the owner of Tru-Green, Terminex, Brinks, and assorted maid, janitorial, plumbing, heating and a/c, smoke and fire damage, appliance repair, and home security services.

(Sources: *Lawn & Landscape e-mail of 12/5/01 and the ServiceMaster website at http://www.corporate-ir.net/ireye/ir_site.zhtml?ticker=SVM&script=410&layout=-6&item_id=230400*)

- The **lawn and garden market** is expected to grow to **\$26 billion by 2005** according to a study by Packaged Facts. Lawn equipment sales hit a historic high of \$12.6 billion in 2000.
- **Environmental Industries Inc** has agreed to purchase **TruGreen Landcare**, the landscape design & installation division of **ServiceMaster**. TruGreen lawn care and landscape maintenance services will continue to operate as divisions within ServiceMaster. (Source: *Landscape Management, Nov 2001*)

Legal issues

- California Governor Gray Davis recently signed a bill that allows homeowners and others to **sue unlicensed individuals** to recover all compensation, even after the satisfactory completion of an improvement. Even if the owner knew that the unlicensed person should have been licensed at the time of making payments. (Source: *www.landscapemanagement.net/newsletter/newsindex.asp on Oct 10, 2001*)
- Beginning Jan 1, 2002, commercial lawn care applicators in Minneapolis Minnesota will **no longer be allowed to use turfgrass fertilizers containing phosphorus**. The city council approved the ban Sept 28th. Lawmakers in St Paul are considering a similar ban. The ordinance also covers retailers that sell turfgrass fertilizer. (Source: *Landscape Management, Nov 2001*)
- Phoenix, Arizona is considering options to reduce smog, including **prohibiting the use of gasoline powered lawn and garden equipment**. In Boulder Colorado, an environmental advisory board recently asked city crews and contractors to stop using leaf blowers. (Source: *Landscape Management, Sept 2001*)
- Back in June, the City of Lynwood, Washington approved a year **moratorium on the use of pesticides in city parks and other municipal property** to allow the city time to develop a permanent policy on the application of chemicals. City employees cautioned that residents will need to become more tolerant of pests and rough looking fields and parks. (Source: *CPCO Advantage Nov 2001*)
- This past June, the Canadian Supreme court ruled to allow municipalities to **ban the residential use of pesticides**. On the heels of that decision 22 municipalities are considering such laws. The province of Quebec is considering a province-wide ban on "cosmetic" pesticides, although 30 other towns in Quebec have already enacted such laws. (Source: *www.landscapemanagement.com/features/feature.asp?ID=405 on Nov 5, 2001*)

Nothing is impossible for the person who doesn't have to do it.

Invasive Invasion - It's Not Just Florida

- Asian longhorn beetle quarantines in **New York and Chicago** area were enlarged again. Infestations have been responsible for the destruction of 7,900 trees since 1996 according to USDA officials. (*Source: Weekly NMPRO e-mail for Nov 20, 2001*)
- **Washington State** Dept of Ag. Placed a quarantine around a Tukwila site where 3 citrus longhorn beetles were captured in August. The beetles were found at a Tukwila nursery on maple trees imported from Korea. The beetle - which resembles the Asian longhorn beetle - attacks and kills some 40 species of trees. (*Source: Weekly NMPRO e-mail for Dec 4, 2001*)
- A **California** Dept of Food & Ag **trained dog** detected fruit fly larva in a package of mangos illegally shipped from Florida. The detection saved potentially millions in control measures. In a separate incident, a portion of San Bernadino County was quarantined after Oriental fruit flies were discovered. (*Source: Weekly NMPRO e-mail for Sept 18, 2001*)

Did You Know?

Of the top 40 Interiorscape businesses in the country, 3 of those businesses call Florida home. **Foliage Design Systems**, based in Orlando is #2 in the country with 2000 revenues of over \$21 million. **Greenery Productions**, also based in Orlando, is #24. **Anything With Plants** is based in Jacksonville and is #32. (*Source: Interior Business, Sept/Oct 2001*)

The **Associated Landscape Contractors of America** today announced that the Busch Gardens Tampa Bay Horticulture Department has been awarded a Decade Award for landscape management of Busch Gardens & Tampa Bay Adventure Park. **OneSource Landscape and Golf Services** has been maintaining this project since 1975.

Why Landscapes Fail

By Michael J. Holsinger, Extension Director, Sarasota County

Recent research, new technology, and environmental issues are causing changes in the way our landscapes need to be designed and maintained.

Xeriscape, Environmental Landscape Management, Integrated Pest Management, Micro-irrigation, slow release fertilizers, and recycling are new "buzz" words for landscape creation and management in Southwest Florida.

These new concepts can actually make landscape management easier and less costly without diminishing the landscape's aesthetic value.

Homeowners, property managers, and landscape professionals that do not become familiar with these concepts and technology risk failure in their landscapes.

The landscape needs to be understood as an integrated system. Watering, mulching, mowing, and pest control are pieces of a puzzle. They are linked and interactive. Mistakes in one management area can cause problems in another.

Some mistakes occur because the growth and structure of plants are not fully



Realistic view of tree roots.

appreciated. An example is the plant's root system. We used to think of it as a mirror image of the top. Now we know that most roots are in the top 18" of soil and extend well beyond the drip line of trees and shrubs. Trees and shrubs function and respond to outside factors differently than grass.

What does this mean in terms of management? What about herbicide applied to grass that consider trees as just big broadleaf weeds? What about insecticide drift from applications on the grass below that cause phytotoxic reactions to emerging tree and shrub foliage? What about high nitrogen fertilizers which are okay for grass but can cause nutrient deficiencies in trees, palms and shrubs?

Native trees often do not survive when construction equipment gouges out all the understory plants beneath them or piles topsoil on their root systems. Many times during

Sure Signs... that you're getting old:

You clean your teeth in the dishwasher
You can't find your glasses when they're on your face
Your back goes out more than you do.

construction soil is also compacted because contractors are primarily concerned with providing a stable situation for the house foundation. This usually extends out into

the landscape. Plants installed in such conditions do not develop good root systems. Drainage during the "rainy season" is also hampered and roots can be "drowned" by too much water.

More often than not, contractors skimp on the landscape. It is the last element to go in. As a result, we often see a standard of mostly cheap grass, a couple of cheap trees, and some shrubs planted under the eaves next to the foundation. No considerations are made of the soil pH (acidity - alkalinity), the condition of the plants, the irrigation requirements during establishment, or the fact that plants under eaves get no natural rainfall. Sometimes all sorts of construction debris ends up buried in the landscapes by uncaring contractors with an "out of sight, out of mind" philosophy. This debris can be very detrimental to plants trying to grow in these areas. Sometimes it's a wonder that anything survives.

Homeowners from the North often arrive knowing next to nothing about the plants that prosper here and inherit the mess.

Some of the other common landscape design and installation mistakes are:

- Trees planted too close to the house.
- Grass planted in narrow strips or on slopes.
- Use of root bound plants.
- Failure to remove root wraps.
- Grass and shrub beds put on the same irrigation zone.
- Palms planted too deep.
- Staking support boards nailed into palm trunks.
- Plants planted in poorly drained locations.
- Organic amendments added to tree planting holes.

Among the consequences that can occur as a result include: tree roots growing against the foundation; branches blocking windows and rubbing against siding, painted surfaces and roofs; difficulties in irrigating turf; stunted plants; over-watering of shrubs; suffocation of palm roots; establishing favorable conditions for plant disease spread; and creating plant nutrient deficiencies.

All in all, many landscapes supposedly planned and installed by people who should know what they are doing, are doomed to failure from the get-go.

Poor Landscape Design/Installation Practices

Pitfall	Consequences	Solution
Lack of protection of native trees during construction	Trees decline and die	Extend protective barriers to tree driplines
Building debris buried in the landscape	Plants don't grow well, or at all	Put debris in dumpsters
Poor fill soil in new landscape	Plants grow poorly	Save site topsoil for landscape
Compaction and poor drainage	Plant roots rot away	Break up hard pan
Adding soil over roots of existing trees	The roots die due to lack of oxygen	Do not add soil over existing tree root zone
Wrong plants for site	Plants grow weakly and decline	Match plants to micro-environment (sun, shade, pH, etc.)
Inferior irrigation design	Plants get fungus disease or die from too much or too little water	Put turf grass and tree/shrub beds on separate zones, and insure head-to head coverage
Putting grass in small strips or on berms and deep shade	Grass is hard to irrigate and maintain and often dies	Use mulch, ground covers and shrubs in these areas
Planting large trees in small confined areas	Trees are stunted and unhealthy	Plant small trees, or shrubs there
Poor quality plants	Poor plant development	Check plants before buying
Planting holes too deep/narrow	Root suffocation, poor root development	Make holes wider but no deeper than root ball
Un-removed wraps and ties	Poor root development	Remove wraps and ties when planting
Adding backfill amendments to tree planting holes	Nutrient deficiencies, circling roots restricted in hole	Do not amend individual holes; amend entire bed
Excessively pruning top when planting	Removal of root stimulating hormones in branch tips inhibits new root development	Prune minimally, or not at all

Competing Grass	Reduction in tree/shrub development	Plant trees and shrubs in mulch
Improper Staking	Disease penetration into plant, poor trunk development	Stake low on trunk, do not nail boards into tree/palm, remove staking once roots are set

If landscapes are not designed for failure, they often fail over time because of poor maintenance practices.

Excessive irrigation, fertilization, and overuse of chemical pesticides can directly or indirectly cause many landscape plant problems in Florida. Often times we can "over-manage" in our efforts to have a perfect landscape.

Major landscape management pitfalls include:

Improperly applied or maintained mulch. Mulch moderates soil temperature, controls weeds, and conserves water. When it is allowed to become thin, plant roots are exposed which can lead to plant death. On the other hand, mulch piled up against the trunks of plants encourage fungal disease.

Failure to properly manage the irrigation system.

Automatic sprinkler systems need to be adjusted to fit climatic conditions and plant needs, watering less frequently in cool or rainy periods. Sprinklers should have head-to-head coverage. Broken or misdirected heads should be fixed. Over-watering encourages fungus disease and thatch formation.

Using the wrong fertilizer at the wrong time. Applying quick release nitrogen during the rainy season wastes fertilizer and can pollute waterways. Fertilizing in the winter months can stimulate new growth that can be killed by a freeze. A balanced fertilizer with equal amounts of nitrogen and potassium, both in slow release form, plus magnesium and the micronutrients is best. The same fertilizer can be applied to trees, shrubs and turf. It will supply a balanced diet of nutrients to the landscape over an extended period, lessens flushes of growth in lawns and reduces pollution potential. Use fertilizer analyses (Nitrogen, Phosphorous, Potassium) of 8-4-12, 12-2-14, 15-5-15, 14-3-14 or as close to these ratios as you can get.



Proper mulching is an important detail.



Irrigation systems need to be checked and adjusted often,

Mowing and Pruning Pitfalls. Mowing grass too short or with a dull blade weakens its root system and fosters foliar disease. The result can be less resistance to drought and pests. Unnatural pruning of plants into squares or balls can shade out lower leaves and deplete plant energy reserves. Flush cutting tree branches or leaving stubs can allow disease organisms to

If flying is so safe, why do they call the airport the 'terminal'?

penetrate the tree interior.

Improper use of pesticides. Spraying when you don't know what the problem is can be wasteful. It can also kill beneficials which may be keeping potential problems in check. Excessive use of pesticides can also cause phytotoxic reactions and injury to desirable plants and increase resistance of pests to the pesticide. Monitoring your landscape, seeking expert help when needed, and spot-treating with the least-toxic effective materials are keys to successful pest management.

With the extended drought and increased water restrictions, times can be tough on lawns and landscapes that are unhealthy or in stress due to poor cultural practices. Learning and practicing the principals of environmental landscape management can result in Florida yards that look good and are able to withstand environmental challenges.

Poor Establishment/Maintenance Practices

Pitfall	Consequences	Solution
Inadequate water during establishment	Roots/tops desiccate and die	Construct water ring just inside root ball, water with bubbler or by hand
Mulch piled against trunks	Fungus disease	Keep mulch away from trunk
Mulch not replenished	Exposed roots die; soil temperatures rise around roots	Replenish mulch to 2-3 inches at least yearly
Malfunctioning irrigation components	Plants/grasses decline/die, water is wasted	Check and repair sprinkler systems regularly
Watering too frequently	Root rots, thatch, more pest problems	Water according to season and plant needs
Excessive fertilization	Water pollution, growth flushes, thatch, pest problems	Fertilize moderately with slow release, balanced components
Fertilizer injected into soil	Expensive, often put below roots and wasted	Fertilize on surface from outside trunk past dripline
Mowing too short and with dull blade	Weak short roots susceptible to drought; foliar disease	Mow high with sharp blade
Poor pruning practices	Disease, insect pest problems, poor plant development which can be hazardous	Prune just outside branch collar, prune shrubs informally
Set schedule pesticide	Can kill beneficials and cause future	Monitor/scout and spot treat; keep

applications	pest outbreaks	plants healthy using good cultural practices
Excessive pesticide use	Plant injury and pest resistance more likely	Use alternative, least toxic solutions, alternate materials

(Source: **Suncoast Horticulture**, the commercial newsletter of the Sarasota County extension office - <http://sarasota.extension.ufl.edu/Hort/Nwsltr/SunHortIndex.htm>)

Any married man should forget his mistakes - there's no use in two people remembering the same thing. Unknown author

New & Interesting Publications

Gemplers, a horticulture supply house, is offering "**Labor Law Compliance, a Working Guide for Ag/Hort Employers.**" The 100 page guide offers important info and compliance guidance on many key laws and regulations affecting their employees. The guide features checklists in both English and Spanish that employers can use to assist in education supervisors. For more info contact bmulhern@gemplers.com (Source: *GMPRO greEn-Mail* for Oct 2, 2001)

Picture Perfect - Mowing Techniques for Lawns, Landscapes and Sports was written by David Mellor. The book was intended for sportsturf managers, but has turned out to be popular with grounds managers and even some homeowners. The highlight of the book is the 64 color plates showing how to produce those great patterns you see on baseball fields. For more info call 1-800-621-5727 (Source: *American Nurseryman Horticultural Books catalog*)

Other Articles of Interest:

While I'd love to go into depth on numerous subjects in the "Growing Concerns" newsletter, the fact is that space and time are limited. Fortunately, many trade magazines contain excellent articles relevant to Florida horticulture professionals. Listed below are some great trade magazine articles from the past several years:

- Collaborating to Control Pink Hibiscus Mealybug - Ornamental Outlook, July 2001
- Cycads Suited for the South - Ornamental Outlook - Sept 2001
- Key Pests of Southern Landscapes CD
- Plant Growth Regulators - Grounds Maintenance - October, 2001
- Using Copper to Control Plant Diseases - Ornamental Outlook - June 2000
- Getting the line on String Trimmers - Grounds maintenance - July 1999
- Redesign through Regulation - Lawn & Landscape - April 2001
- Pruning Practices in the Landscape - Ornamental Outlook - April 2000
- The Lowdown on perennial trials - Ornamental Outlook - May 2000

**If you can keep your head while all about you
are losing theirs, you haven't understood the plan.**

Top 20 Reasons Why Herbicides Fail

According to Joseph Neal in the March 2001 Landscape Management magazine, the reasons are: **(Please notice that nearly all of these are applicator error)**

1. Not reading and/or following label specifications
 2. Improper weed identification
 3. Improper herbicide selection
 4. Improper method of application
 5. Improper timing of application
 6. Unfavorable temperature and/or moisture conditions affecting poor weed growth.
 7. Age and growth stage of the plant - young vs mature target weed
 8. Temperature too hot or cold
 9. Skipped area - spot treating / poor overlapping resulting in poor coverage
 10. Foliage not wet - product failed to penetrate
 11. Low concentration of mix - not enough active ingredient to manage weed
 12. High concentration of herbicide killed the top, not the roots
 13. Wind drift - failure to deliver herbicide to the target
 14. Rain following application washed off treatment
 15. Product too old - deactivated
 16. Product caked - spoiled
 17. Product separated into layers
 18. Chemical and or physical incompatibility
 19. High pH of water caused herbicide to degrade
 20. Droplet size too large - some herbicides perform better if particle size is finer
- (Source: Landscape Management, March 2001)*

Ongoing research

The Agricultural Research Service and the University of Georgia have teamed up to screen varieties of Bermuda grass for types that **naturally deter mole crickets**. In trials the selected varieties sustained up to 90% less damage than Tifdwarf, Tifway and other commercial cultivars. Depending on further tests, these varieties could become commercially available in the next few years. *(Source: www.lawnandlandscape.com/features/feature.asp?ID=309)*

Three different species of beetles have been found by the Agricultural Research Service to feed on the **water lettuce**, an aquatic invasive weed commonly found in Florida waters. Currently the State of Florida spends more than \$650,000 annually to control the weed. *(Source: ARS e-mail of July 2001)*

Only in America...

Do we use answering machines to screen calls and then have call waiting so we won't miss a call from someone we didn't want to talk to in the first place.

Pesticide Potpourri

- **Valent USA Corp** has reached an agreement with the EPA that ensures **Orthene products** (acephate) will continue to be available to homeowners, farmers and professional users well into the 21st century. After an intensive review of Orthene, the EPA concluded that all Orthene products will remain available. Valent, however has agreed to modify Orthene labeling to withdraw Pest control Operator use inside residential buildings, and certain residential turf uses. (Source: www.valent.com/news_events/news.asp?industry=1&src=)
- **Purcell Technologies Inc** received EPA approval of **the first slow-release granular fire ant product**. Acephate granules are polymer coated and release pesticide over time through osmotic diffusion. Added benefits to the polymer coating are reduced applicator exposure and decreased environmental impact. (Source: *Weekly NMPRO e-mail for Sept 11, 2001*)
- Early versions of the Waipuna **hot-water weed control system** used only boiling water to control weeds. The latest version generated a biodegradable foam added to the treatment water. The foam produces a thin film that prevents heat from immediately dissipating as the hot water is released. Without the foam, operators had to saturate the ground with hot water to do the job. Now they only have to get the vegetation wet to do the job. For more information contact jeff@waipuna.com (Source: www.lawnandlandscape.com/features/feature.asp?ID=69)
- EPA has sent a letter to all **dimethoate** (Cygon, etc) registrants requesting that they amend all labels to delete all non-agricultural uses. (Source: *Chemically Speaking, June 2001*)
- After years of use in the greenhouse, **Medallion** (fludioxonil) a fungicide by **Syngenta**, has been approved for use in outdoor nurseries and on landscape ornamentals. The EPA gave Medallion a new label for control of certain foliar, root and stem diseases in more than 40 plants. (Source: *Ornamental Outlook, October, 2001*)

Top 10 Euphemisms

Merriam-Webster's Collegiate Dictionary defines 'euphemism' (U-fum-iz um) as "the substitution of an agreeable or inoffensive phrase for one that may offend or suggest something unpleasant." We've all heard euphemisms like "one brick shy of a load." The following are similar in meaning.

10. Too much yardage between the goal posts.	5. A few fries short of a Happy Meal.
9. His antenna doesn't pick up all the channels.	4. As smart as bait.
8. Skylight leaks a little.	3. An intellect rivaled only by garden tools.
7. Doesn't have all his dogs on one leash.	2. The wheel's spinning, but the hamster's dead.
6. The cheese slid off her cracker.	1. Couldn't pour water out of a boot with instructions on the heel.

Websites of Interest

Pest Ants of Florida - <http://www.ftld.ufl.edu/Pest%20Ants%20of%20FL.htm> - This site was originally a booklet intended for the pest control industry. Information has been added and then converted for use on the web. Everything you need to know about ants in Florida! Great site, lots of information.

Texas A&M University has a number of potentially useful calculating tools online at <http://aggieturf.tamu.edu/tools.html> The tools include an irrigation usage & budget calculator, a fertilizer rate calculator, and sprayer and spreader calibration calculators.

www.invasivespecies.gov - This government resource provides detailed information on **non-native plants and animals**, how they affected their adopted ecosystems and what people are doing to stop them.

Texas A &M's Imported Fire Ant Site - <http://fireant.tamu.edu/> - Wow what a great site! Tons of articles, videos in all the popular formats, management tips, photos, links, an archive of newsletters, and even a selection of information in Spanish.

Calendar of Events

JAN

Jan 5 - PCO CEU's by CPCO - Miami - call CPCO for details 954-724-8806

Jan 5 - PCO CEU's by CPCO - Tampa - call CPCO for details 954-724-8806

Jan 8 - Pesticide Testing Hillsborough County (9:00am - 2nd Tuesday of the month) 813-744-5519

Jan 8 - Application deadline for the PCO exam Special ID / Fumigation Exam test to be given on March 13, 2002 in Winter Haven see the website at <http://doacs.state.fl.us/~aes-ent/pestcntrl/pcpage9.html>

Jan 9 - Fla Turfgrass Assn Regional Turf Conference CEU's - Tampa call 1-800-882-6721 for more information / registration

Jan 10 - Fla Turfgrass Assn Regional Turf Conference CEU's - Windemere, Central Fla call 1-800-882-6721 for more information / registration

Jan 12 - PCO CEU's by CPCO - Jacksonville - call CPCO for details 954-724-8806

Jan 12 - PCO CEU's by CPCO - West Palm Beach - call CPCO for details 954-724-8806

Jan 12 - Winter 2002 Turf & Ornamental Pest Control Workshop CEU's - Orlando Contact Tom MacCubbin, 407-836-7570

Jan 14 - Application deadline for the PCO exam Termite & WDO Control Fumigation Exam test to be given on March 12, 2002 in Winter Haven see the website at <http://doacs.state.fl.us/~aes-ent/pestcntrl/pcpage9.html>

Jan 14 - Application deadline for the PCO exam Lawn & Ornamental and General Household Exam test to be given on March 11, 2002 in Winter Haven see the website at <http://doacs.state.fl.us/~aes-ent/pestcntrl/pcpage9.html>

Jan 16 - Pesticide Testing Sumpter County - Contact Andy Rose 352-793-2728

Jan 17 - Fla Turfgrass Assn Regional Turf Conference CEU's - Ft Lauderdale call 1-800-882-6721 for more information / registration

- Jan 17 - Limited Commercial Exam Prep Class CEU's** (no test afterward) - Sarasota, Contact Bill Phagan 352-588-0459
- Jan 18 - Bill Phagan's "Money Maker" Class** - Sarasota, Contact Bill Phagan 352-588-0459
- Jan 19 - PCO CEU's by CPCO** - Orlando - call CPCO for details 954-724-8806
- Jan 19 - Limited Commercial Exam Prep Class CEU's** (no test afterward) - Naples, Contact Bill Phagan 352-588-0459
- Jan 20 - Bill Phagan's "Money Maker" Class** - Naples, Contact Bill Phagan 352-588-0459
- Jan 22 - Fla Turfgrass Assn Regional Turf Conference CEU's**- Lake Worth call1-800-882-6721 for more information / registration
- Jan 23 - Fla Turfgrass Assn Regional Turf Conference CEU's**- Ft Myers call1-800-882-6721 for more information / registration
- Jan. 25-26, 2002 - Gulf States Horticultural Expo-AL/LA/MS** - Mobile, AL, Gulf States Horticultural Association (334-821-5148)
- Jan 26 - PCO CEU's by CPCO** - Ft Lauderdale - call CPCO for details 954-724-8806
- Jan 30 - Fla Turfgrass Assn Regional Turf Conference CEU's**- Jacksonville call1-800-882-6721 for more information / registration
- Jan 31 - Fla Turfgrass Assn Regional Turf Conference CEU's**- Milton call1-800-882-6721 for more information / registration

FEB

- Feb 12 - Pesticide Testing Hillsborough County** (9:00am - 2nd Tuesday of the month) 813-744-5519
- Feb 22 - Tree & Landscape Short Course** - Tampa, Florida State Fairgrounds, 813-744-5519
- Feb 22-23 Tampa Spring Expo** - Horticulture Trade Show - Florida State Fairgrounds 813-655-1914

MAR

- Mar 11 - PCO Exams** (Lawn & Ornamental and General Household categories) in Winter Haven see the website at <http://doacs.state.fl.us/~aes-ent/pestcntrl/pcpage9.html>
- Mar 12 - Pesticide Testing Hillsborough County** (9:00am - 2nd Tuesday of the month) 813-744-5519
- Mar 12 - PCO Exams** (Termite & WDO Control Fumigation categories) in Winter Haven see the website at <http://doacs.state.fl.us/~aes-ent/pestcntrl/pcpage9.html>
- Mar 13 - PCO Exams** (Special ID - Fumigation categories) in Winter Haven see the website at <http://doacs.state.fl.us/~aes-ent/pestcntrl/pcpage9.html>

To simplify the information in this newsletter, it is sometimes necessary to use trade names or products, equipment and firms. No endorsement is intended, nor is criticism implied of similar products, equipment and firms which are not mentioned.

Hillsborough Community College Schedule

Spring 2002 - For more information, call Fred Webb at 813-757-2104 or Joan

Raynor at 813-757-2112 or go to the HCC website at <http://www.hcc.cc.fl.us/>

Course #	Course Name	Section #	Times	Days	Room
ORH 1412 - 3 hr	Plant Physiology & Growth	31043	6:30- 9:20pm	T	Plant City Campus PFLS 109
IPM 1631 - 3 hr	Plant Pests	30572	6:30- 9:20pm	M	Plant City Campus PFLS 109
IPM 1631L - 1 hr	Plant Pests Lab	30573	5:30- 6:20pm	M	Plant City Campus PFLS 109
ORH 1262 - 3 hr	Floriculture	31041	6:30- 9:20pm	W	Plant City Campus PFLS 109
ORH 1262L - 1 hr	Floriculture Lab	30142	5:30- 6:20pm	W	Plant City Campus PFLS 109
ORH 2212 - 2 hr	Woody Ornamental Plants	30146	8:00- 9:50am	S	Lowry Park
ORH 2212L - 1 hr	Woody Ornamental Plants Lab	30147	10:00am- 1:50pm	S	Lowry Park
ORH 1220 - 3 hr	Turf & Landscape Managemen t	31010	6:30- 9:20pm	Th	Plant City Campus PFLS 109
ORH 1524 - 3 hr	Native Wetland Plants	31045	6:00- 7:50pm	W	Lowry Park
ORH 1892 - 3 hr	Landscape Installation	00226	5:30- 6:20pm	T & Th	Plant City Campus PFLS 109
HOS 1030 - 3 hr	Horticulture Science	00228	8:00- 9:15am	M & W	Plant City Campus PFLS 109

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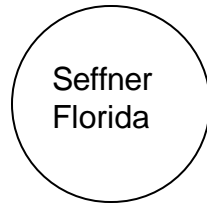
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