MARCRAFT

CYBERSECURITY, GREEN TECHNOLOGY & MORE
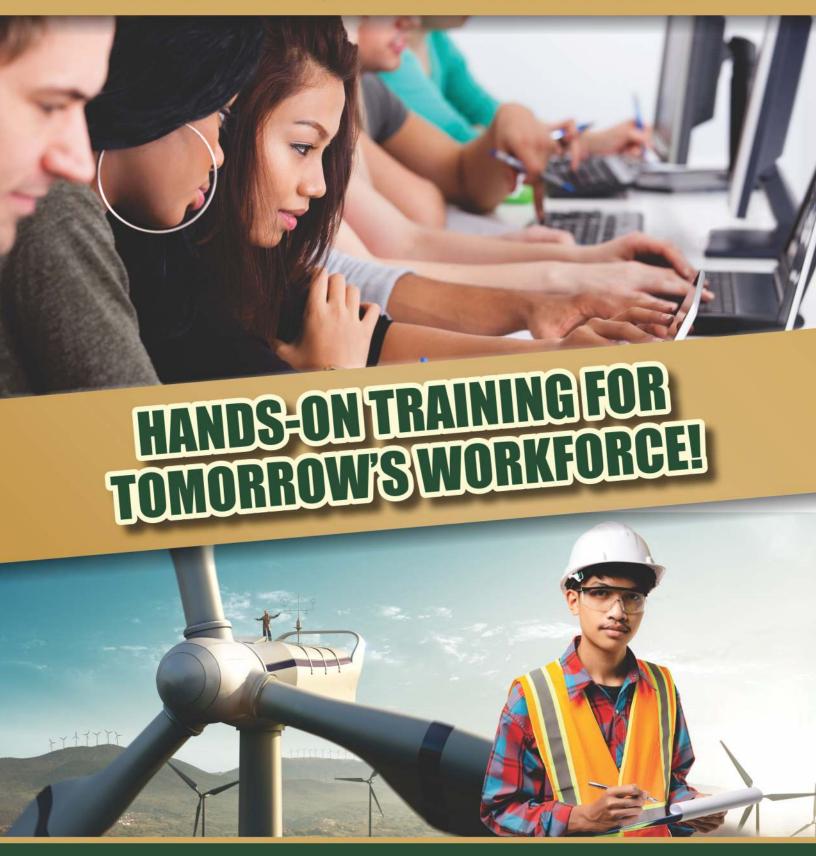
HANDS-ON TRAINING FOR TOMORROW'S WORKFORCE!

TABLE OF CONTENTS

OUR COMMITMENT TO QUALITY EDUCATION

Marcraft's mission is to develop products and curriculum of exceptional quality for use in effectively teaching and training individuals in careers such as Cybersecurity & IT, Green Technologies, Smart Homes, Connectivity and more. These programs are tailored toward today's high-demand skill sets. Marcraft stands above the rest as the premier technical training provider specializing in hands-on, real-world inspired labs and practicums. Marcraft's approach to these subjects focuses on providing a comprehensive and integrated program tailored toward achieving the skills, knowledge, and certification necessary to begin and/or advance the career of choice.

WHY CHOOSE MARCRAFT?

Marcraft has been providing technical training solutions for more than 40 years. Today, we focus on Cybersecurity & IT, Green Technology, Connectivity and Smart Technology Systems training programs that excel in either a classroom or professional training environment. We engineer and design the training hardware, training software and courseware materials necessary for success in your school classroom, career/technical education facility, or professional training environments around the globe. Marcraft serves customers in all 50 states, the Canadian provinces and in more than 30 countries around the world.
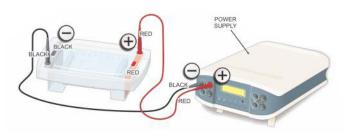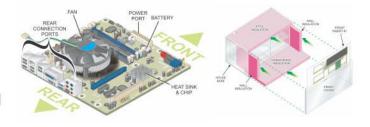
FOR THE STUDENT

Providing just a textbook to teach different skills is an incomplete approach. Learning should be both cognitive and physical. Our programs consist of instruction for both theory and hands-on procedures using real equipment and software students will encounter in the field. All books are fully illustrated, and authored by experienced professionals in each discipline.

Nowhere else will students will receive this level experience and interaction in their chosen field.

- Hands-on, Industry-Inspired Lab Exercises
- Comprehensive and Illustrated Curriculum
- Test Prep for Industry Certification Exams
- Extensive Online Content
- Real-World Experience Used to Create Step-by-Step Paths to Certification

Marcraft is a proud supporter, contributor and judge at the National SkillsUSA Competition! We chair the national Cybersecurity competition.

FOR THE INSTRUCTOR

Marcraft programs include everything an instructor needs to successfully prepare students for careers in their chosen skill. These all-inclusive programs are customizable to each different learning environment. Each program includes outstanding instructor support and training, industry standard hardware and our elite curriculum to ensure student success rates stay high.

All of Marcraft's turn-key programs come with access to an instructor specific Online Learning Management System (LMS) complete with the proper curriculum, test banks, PowerPoints and gradebook features needed to teach the material to each select group of students.

Instructors can use the materials provided to assist students with their industry certification test preparations. Utilizing the LMS portal, instructors have access to study guides, reference material and even test banks which can be used to create customized practice tests specific to your students' needs.

- On-Site Instructor Training
- Online Classroom Management (LMS)
- 1-800 Tech Support
- Industry Certification Test Prep
- Industry Standard Hardware

Charles Brooks providing instructor training for the Cybersecurity Essentials Program at South Carolina State University

"Marcraft is a great company that has provided our students with skills in cyber defense that I feel are crucial for their success, internships, and jobs. Where else will you learn to hack a PLC? Where else do you learn to hack your own heart rate?"

GEORGE MEGHABGHAB
ROANE STATE COMMUNITY COLLEGE
OAK RIDGE, TENNESSEE

Instructors training for the Industrial Network Cybersecurity Certification Program Whatcom College In Bellingham, Washington

Charles Brooks (second from left) performing instructor training at Sarawak Skills Development Centre Kutching, Malaysia

WHY CHOOSE MARCRAFT?

FOR THE EMPLOYER

All Marcraft programs are created and built using industry standard hardware and software to ensure all hands-on activities match with real world expectations. This genuine training experience prepares students for potential career paths in their chosen skill by preparing them for both their industry standard certifications exams as well as their first day in the field.

> "CTE is an investment in the future of our economy, our workforce and our country."
>
> REPRESENTATIVE JAMES LANGEVIN

Desirable career certifications are at the heart of what Marcraft represents. With leading experts from both the educational and industrial communities, we have created instructional materials and certification practice exams in an effort to exhaustively prepare students for their future. In pursuit of the desired certification, students will gain not only the knowledge of theory that they will need to succeed, but also all of the hands-on skills that employers demand.

What is Career and Technical Education?

CTE is delivered at comprehensive and dedicated high schools, area technical centers, community colleges, technical colleges, and some 4-year universities. Students can earn industry certifications and licenses along with other degrees.

CTE is the answer to the nation's projected deficit of 6.5 million skilled workers in various fields.

> "Students in postsecondary CTE programs are more likely to be employed within five years than those in an academic field of study."
>
> CTEworks

Hands-on Skills Employers Demand!

MARCRAFT PROGRAMS PREPARE STUDENTS FOR THESE CERTIFICATIONS:

CYBERSECURITY & IT

1. CompTIA Information Technology Fundamentals Plus (ITF+)
Marcraft Course: ITF+

2. CompTIA A+ Certification
Marcraft Course: Maintaining and Repairing PC's

3. CompTIA Network+ Certification
Marcraft Course: Network+ Certification

4. AccessData Certified Examiner (ACE) Credential
Marcraft Course: Digital Forensics

5. ISACA Security Fundamentals Certificate
Marcraft Course: Cyber Security Essentials

6. CompTIA Security+
Marcraft Course: Cyber Security Essentials

7. Certified Pentester (CompTIA Pentest+)
Marcraft Course: Hacking, Cracking and Internet Jacking (Advanced Pentesting)

8. ISC2 Certified Information Systems Security Practitioner (CISSP)
Marcraft Course: Advanced Enterprise Security

9. Network Analyst (CompTIA CySA+)
Marcraft Course: Cyber Security Analyst

10. SANS Global Industrial Cyber Security Professional (GICSP)
Marcraft Course: Advanced Industrial Security

GREEN TECHNOLOGIES

1. NABCEP PV Installer, Entry Level
Marcraft Course: Solar/PV Installer Certification Program

2. Electronic Technicians Association (ETA) Solar/PV Installer
Marcraft Course: Solar/PV Installer Certification Program

3. Electronic Technicians Association (ETA) Small Wind Installer
Marcraft Course: Wind Turbine Technician Training Guide

4. RESNET Rater
Marcraft Course: Energy Auditing

SMART HOME

1. Electronic Technicians Association (ETA) Basic Smart Technology Systems (STS)
Marcraft Course: STS Basic Certification Program

2. Electronic Technicians Association (ETA) STS Audio-Video Endorsement
Marcraft Course: STS Audio-Video Endorsement

3. Electronic Technicians Association (ETA) STS Security-Surveillance Endorsement
Marcraft Course: STS Security-Surveillance Endorsement

4. Electronic Technicians Association (ETA) STS Computer Networking Endorsement
Marcraft Course: STS Computer Networking Endorsement

5. Electronics Technicians Association (ETA) STS Environmental Controls Endorsement
Marcraft Course: STS Environmental Controls Endorsement

SPECIALTY PROGRAMS

1. Electronic Technicians Association (ETA): Certified Alarm Security Technician
Marcraft Course: Security & Surveillance Certification Program

2. Electronic Technicians Association (ETA): Fiber Optic Installer
Marcraft Course: Fiber Optic Installer Certification Program

3. Electronic Technicians Association (ETA) Data Cabling Installer
Marcraft Course: Low Voltage Wiring Certification Program

WHY GET CERTIFIED?

THE ADVANTAGES OF INDUSTRY CERTIFICATION

#1 Demonstrates Proficiency

An industry certification verifies an individual possesses the knowledge and skills needed to thrive in the workforce. The standards assessed in a certification exam are established by industry leaders and are based on industry needs. Employers can be assured the individual has mastered the industry standards tested in the certification exam and are highly-qualified and well-trained employees.

#2 Leads to More Employment Opportunities

An industry certification can open doors when it comes to employment opportunities. Studies show individuals who earn industry certifications are more likely to be employed one year after earning a certification. Because those who earn industry certifications have a verified set of knowledge and skills, employers are more willing to hire them compared to someone without an industry certification. Comparatively, earning a certification can be a valuable asset to individuals who are looking to advance their career through promotions

#3 Increases Earning Potential

Because industry certification earners are more proficient and effective in their positions, they are more likely to earn higher salaries and pay increases than those without industry certifications.

#4 Offers Professional Development Opportunities

Some businesses and industries encourage employees to expand their knowledge and skills by offering professional development opportunities or requiring continuing education credits. Earning an industry certification is a way for a student or employee to strengthen their resume while becoming a more valuable asset to their company.

#5 Provides Job Security

While not all careers require a 4-year college degree, more than half of all jobs descriptions in the U.S. call for some form of post-secondary education. 53 percent of jobs are considered middle-skills positions. These positions require education beyond a high school diploma but less than a college degree. However, only 43 percent of individuals possess the necessary requirements to fill middle-skills positions. One way to meet the necessary educational and training requirements of a middle-skill position is by earning an industry certification. Researchers estimate by 2024, 48 percent of all job openings will be middle-skill positions.

#6 Offers Professional Credibility

Not only does an industry certification boost an individual's credibility with employers, it can also be a signal to coworkers and other professionals in the industry the certification earner is highly-qualified and possesses the necessary knowledge and skills needed to be an asset to the company. Individuals who possess professional credibility are more likely to be effective in their positions, find more enjoyment in their work and experience camaraderie with their coworkers and supervisors.

#7 Shows Commitment to Industry

An individual who earns an industry certification demonstrates his or her passion commitment to the industry. Earning an industry certification requires a significant investment of time and effort and indicates the individual is willing to put forth the necessary requirements to achieve success.

#8 Keeps Current with Industry Changes

Earning an industry certification guarantees the individual is up-to-date with current industry standards and practices, especially if the individual has been in the field in for a significant portion of their career. Remaining current is particularly important in industries where the technologies and methods change quickly.

#9 Increases Employee Value

Regardless of an individual's career stage, listing an industry certification on a resume is a signal to potential employers the applicant has the necessary knowledge and skills needed to be an effective employee. On average, employers spend $1,252 and invest 33.5 hours to training a new employee. However, this investment does not ensure an employee will be fully productive after the 33.5 hours, and it takes an average of eight months for an employee to be fully, independently productive. Individuals who have earned an industry certification require less on-the-job training and become fully productive at a faster rate. When an employer hires an industry certification earner, they save their company valuable time and resources by employing an individual who already possesses the necessary qualifications and training.
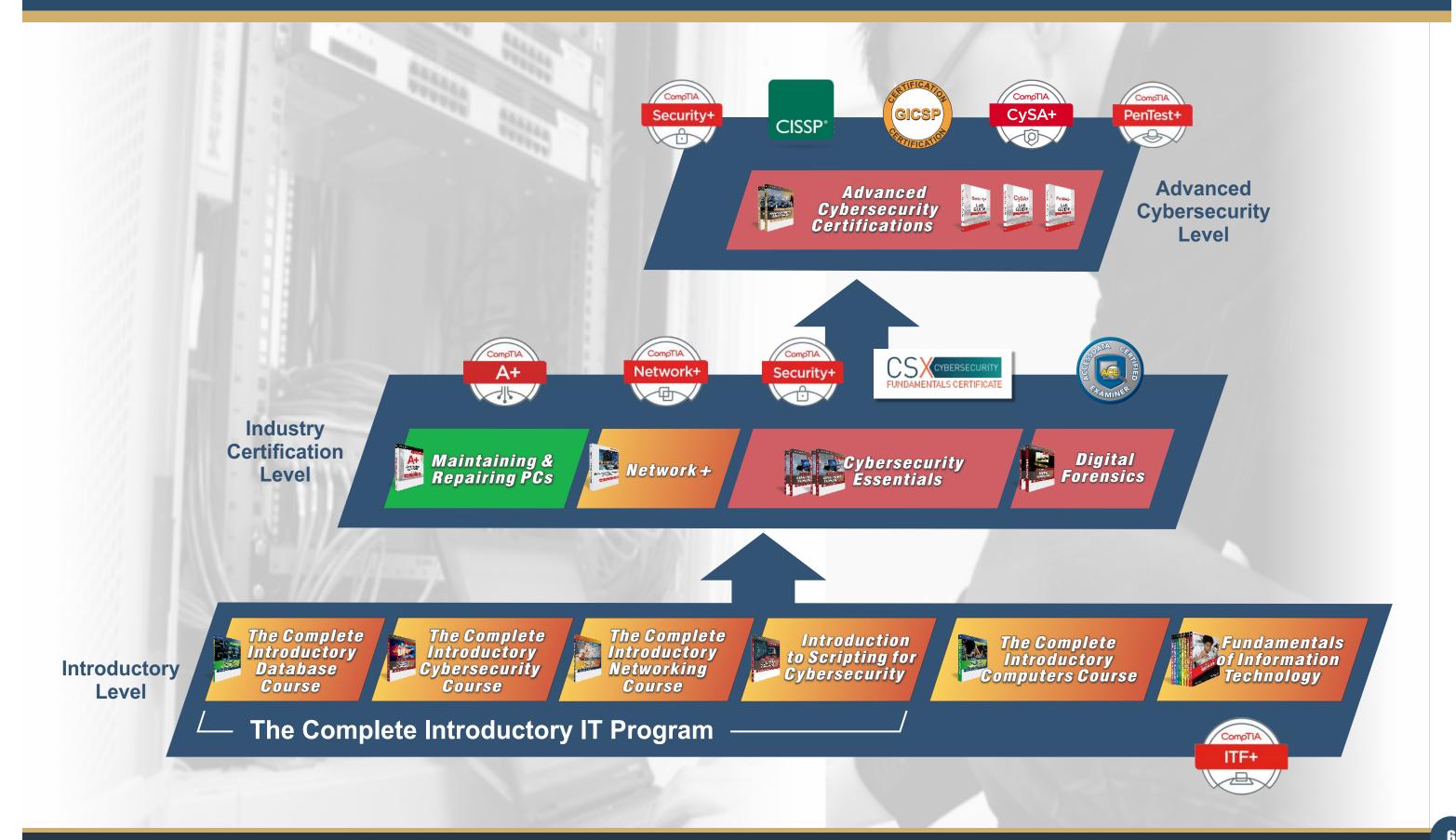
#10 Expands Professional Network

When an individual earns a certification from a recognized industry leader, he or she is automatically connected to the certifying organization. Not only does this allow the individual to associate themselves with the certifying organization, but they also join the ranks of others who have earned the industry certification. This expands their professional network, connecting them to thousands of individuals who share their knowledge, skills and passion for the industry.

NOTE: Industry certifications have much more validity and value when they are created and accepted by potential employers as "industry-standard". For example, if you conduct an Internet search on Indeed.com or other job search web sites with the certification name (ie. CompTIA Security+, Cisco CCNA, or ASE), you will find employers specifically asking for them.

Other certifications or certificates, many times proprietary in nature ("for us by us"), have been created by testing companies or curriculum companies as a way to sell tests or books. These do not provide much benefit to the student in terms of their marketability to an employer.

IT & CYBERSECURITY PROGRESSION

Advanced Cybersecurity Level

Security+ · CISSP® · GICSP · CySA+ · PenTest+

Advanced Cybersecurity Certifications

Industry Certification Level

A+ · Network+ · Security+ · CSX CYBERSECURITY FUNDAMENTALS CERTIFICATE · ACCESSDATA CERTIFIED EXAMINER

Maintaining & Repairing PCs · Network+ · Cybersecurity Essentials · Digital Forensics

Introductory Level

The Complete Introductory Database Course · The Complete Introductory Cybersecurity Course · The Complete Introductory Networking Course · Introduction to Scripting for Cybersecurity · The Complete Introductory Computers Course · Fundamentals of Information Technology

The Complete Introductory IT Program

ITF+

6

FUNDAMENTALS OF INFORMATION TECHNOLOGY CERTIFICATION PROGRAM
ITF-1000

The Fundamentals of Information Technology Certification Program covers a wide range computer related topics written for students with little to no computing experience. The program covers everything from building, operating, networking, securing, and troubleshooting a computer. This course prepares students for the ITF+ certification and exam offered by CompTIA.

CERTIFICATIONS

CompTIA ITF+

CompTIA Information Technology Fundamentals (ITF+) Certification

Not Just a Simulation! Hands-on Labs Use the Following Equipment:

- Motherboards
- CPUs
- RAM Memory Modules
- Hard Drives
- Optical Drives
- Video, Sound & Networking Cards
- Keyboards & Mice
- Wireless Home Routers
- Tablet Computers
- Faulty RAM, Cables, Expansion Cards & Other Components

The Marcraft Fundamentals of IT Certification Course covers these topics:

- Computer Components
- Building a PC
- Operating Systems
- BIOS & UEFI
- Operating the Windows OS
- Computer Security
- Types of Software
- Word Processors
- Spreadsheets
- Presentation Software
- Databases
- Computer Networking
- Networking Hardware & Protocols
- Network Security
- The Internet
- HTML, CSS, & Website Design
- Troubleshooting
- **AND MUCH MORE!**

8 STATIONS

Includes student text/lab guides, software, equipment, test prep and instructor package

= Station requires 2 school provided PCs

- **COMPUTER ARCHITECTURE** — 2x Windows 10, 2x Intro to Computers Kit
- **OPERATING SYSTEMS** — 2x Windows 10
- **CODING** — 2x Visual Studio
- **DATABASE MANAGEMENT** — 2x Apache OpenOffice
- **TROUBLESHOOTING** — 2x Advanced Computers Kit, Fault Kit
- **WEB DEVELOPMENT** — 2x openElement
- **PRODUCTIVITY TOOLS** — 2x Apache OpenOffice
- **NETWORKING** — SOHO Router & 2 Tablet Computers

Real World Inspired Hands-on Labs!

INCLUDES:

ITF-1000   Fundamentals of Information Technology Package for 24 Students Working in Pairs (Requires 12 PC Workstation Computers)

Instructor's Guide with PowerPoint Presentation Media (1 Per Classroom)

ACCESSORIES:

ITF-100   Fundamentals of Information Technology Text and Lab Guides (Set of 8 books)

INTRODUCTION TO COMPUTERS
MC-2300

The Complete Introductory Computer Course has been designed to give students a hands-on exploration of computers, how they work, what they can do, and how to keep them running. The course removes the aura of mystery surrounding the personal computer, giving the knowledge and confidence needed to use and maintain a computer.

Not Just a Simulation! Hands-on Labs Use the Following Equipment:
- Motherboards
- CPUs
- RAM Memory Modules
- Hard Drives
- Optical Drives
- Video, Sound & Networking Cards
- Keyboards & Mice
- Faulty RAM, Cables, Expansion Cards & Other Components

The Marcraft Introduction to Computers Program covers these topics:
- Computer Components
- Building a PC
- Operating Systems
- BIOS & UEFI
- Operating the Windows OS
- Computer Security
- Types of Software
- Word Processors
- Spreadsheets
- Presentation Software
- Databases
- Troubleshooting
- **AND MUCH MORE!**

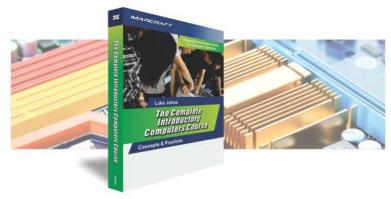## Real World Inspired Hands-on Labs!

INCLUDES:

MC-2300	Complete Introductory Computer Course 1 Station (Student Built PC & Fault Kit) Instructor's Guide with PowerPoint Presentation Media (1 Per Classroom)

ACCESSORIES:

MC-2305WCD	Complete Introductory Computer Course Text/Lab Guide

INTRODUCTION TO NETWORKING
MC-2400

The Complete Introductory Networking Course is a great introduction to the world of computer networking. This introductory course will outline how computers exchange data and share resources, what communication protocols are and the systems of rules that govern computer networks worldwide.

Not Just a Simulation! Hands-on Labs Use the Following Equipment:
- SOHO AP/Routers
- Cable Stripper & Crimpers
- Ethernet Connectors
- Network Interface Controllers
- Cable Testers

The Marcraft Complete Introductory Networking Course covers these topics:
- Interfaces
- Cabling
- Network Types
- Topologies
- Protocols
- Network Devices
- Cable Testers
- Network Administration
- Network Backup Strategies
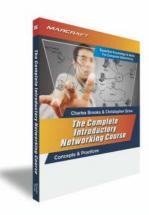- Troubleshooting
- **AND MUCH MORE!**

Real World Inspired Hands-on Labs!

INCLUDES:

MC-2400 — Complete Introductory Networking Course for 24 Students Working in Pairs (Requires PC Workstation Computers)
Instructor's Guide with PowerPoint Presentation Media (1 Per Classroom)

ACCESSORIES:

MC-2405WCD — Complete Introductory Networking Course Text/Lab Guide with Digital Media

INTRODUCTION TO CYBERSECURITY
DC-3500CS

The Complete Introductory Cybersecurity Course presents the basic theories and best practices for securing computing devices and networks. Students will learn through the combination of Theory and Lab Practices about Security Layers, Operating System Security, Network Security, Security Software and Cybersecurity.

Not Just a Simulation! Hands-on Labs Use the Following Equipment:
- Wireless AP/Routers
- Managed Switches

The Marcraft Complete Introductory Cybersecurity Course covers these topics:
- Access Control
- Attack Surfaces
- Social Engineering Threats
- Physical Security
- Computer Security
- OS Security
- Authentication
- Encryption
- Protocol Security
- Client, Server, & Email Security
- **AND MUCH MORE!**
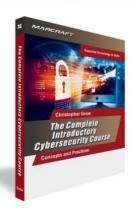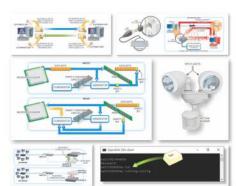
Real World Inspired Hands-on Labs!

INCLUDES:

DC-3500CS Intro to Cybersecurity Equipment Package for 24 Students Working in Pairs (Requires Dedicated PC Workstation Computers)
Instructor's Guide with PowerPoint Presentation Media (1 Per Classroom)

ACCESSORIES:

DC-350CS Intro to Cybersecurity Text and Lab Guide

INTRODUCTION TO NETWORKING & CYBERSECURITY COMBO
CS-3500COM

Combines both the Introduction to Networking Course and Introduction to Cybersecurity Course into one package.

INCLUDES:

DC-3500CS Intro to Cybersecurity Equipment Package for 24 Students Working in Pairs (Requires Dedicated PC Workstation Computers)
MC-2400 Complete Introductory Networking Course for 24 Students Working in Pairs (Requires PC Workstation Computers)
Instructor's Guides with PowerPoint Presentation Media (1 Per Classroom)

ACCESSORIES:

DC-350CS Intro to Cybersecurity Text and Lab Guide
MC-2405WCD Complete Introductory Networking Course Text/Lab Guide with Digital Media

INTRODUCTION TO SCRIPTING FOR CYBERSECURITY
MC-2600

Coding is the heart of cybersecurity. It is important that cybersecurity personnel in various job roles understand programming tools so that they can decipher the overall strategies, tactics and goals of attackers. In addition, they often use scripting languages to create programs that will carry out specific or repetitive cyber operations. Four of the most widely used scripting languages include – Python, Powershell, Bash and Ruby.

Some of the most common cybersecurity-related job roles and their relationships with coding include: Penetration testers, Incident responders, and Cyber System Analysts.

This course introduces the student to these scripting languages and leads them to develop applications to perform cybersecurity-related activities.

Not Just a Simulation! Hands-on Labs Use the Following Scripting Languages:
>   Python
>   Ruby
>   PowerShell
>   Bash

The Marcraft Introduction to Scripting for Cybersecurity Course covers these topics:
>   Differences Between Structured Programming and Coding (using Scripting Languages)
>   Basic Commands of Ruby, Python, Bash, and PowerShell
>   Command Line Structures for Each Language
>   Applications to Automating Cybersecurity-Related Operations
>   **AND MUCH MORE!**

Real World Inspired Hands-on Labs!

INCLUDES:

MC-2600	Intro to Scripting for Cybersecurity Package for 24 Students Working in Pairs (Requires PC Workstation Computers)
	Instructor's Guide with PowerPoint Presentation USB Drive (1 Per Classroom)

ACCESSORIES:

MC-2605	Intro to Scripting for Cybersecurity Text and Lab Guide

11

INTRODUCTION TO DATABASES
MC-2700

The Complete Introductory Database Course is course designed to provide an introduction to the basic structure of databases as well as the implementation of database administration and security. Completing this course is a great way to gain user knowledge and confidence needed to move forward in a strong career. This course will also briefly introduce students to Database Management Systems.

Not Just a Simulation! Hands-on Labs Use the Following Equipment & Software:
Relational Database Management Systems
SQL

The Marcraft Complete Introductory Database Course covers these topics:
Database Fundamentals
Data Tables
Entity Relationship Diagrams
Entering and Editing Data
Sorting & Filtering
Query Basics
Action Queries
Introduction to SQL
Forms and Reports
Charts, Events, and Macros
Database Administration
Database Security
AND MUCH MORE!

Real World Inspired Hands-on Labs!

INCLUDES:

MC-2700   **Intro to Databases Program Package for 24 Students Working in Pairs (Requires PC Workstation Computers)**
Instructor's Guide with PowerPoint Presentation Media (1 Per Classroom)

ACCESSORIES:

MC-2705   Intro to Databases Text and Lab Guide

MAINTAINING AND REPAIRING PCS CERTIFICATION PROGRAM
MC-9002

The Marcraft Maintaining and Repairing PCs program was designed specifically in support of the CompTIA A+ certification. Through an unmatched combination of world class text theory and hands-on lab exercises based around the industry standard hardware provided, students will learn and master skills in Operating Systems, Hardware, Networking, Security, Virtualization, Cloud Computing, Operational Procedures, Troubleshooting, and Mobile Devices.

CERTIFICATIONS

CompTIA A+
CompTIA A+ Core 1
CompTIA A+ Core 2

Not Just a Simulation! Hands-on Labs Use the Following Equipment:
- Motherboards & CPUs
- RAM Memory Modules
- Hard Drives
- Optical Drives
- Video, Sound & Networking Cards

The Marcraft A+ Certification Course covers these topics:
- Computer Hardware
- Networking Fundamentals
- Installing Wireless and SOHO Networks
- Security Concepts
- Securing Operating Systems
- Troubleshooting Network & Hardware Problems
- Windows 10, 8/8.1, & 7 Operating Systems
- macOS & Linux Operating Systems
- Network Services
- Virtualization
- Cloud Computing
- **AND MUCH MORE!**

Real World Inspired Hands-on Labs!

Includes a Fault Kit

Fault Kit

INCLUDES:

MC-9002 1 Maintaining & Repairing PCs Trainer
1 Universal Engineered Hardware/Software Fault Set
Instructor's Guide Package with Technician Level Diagnostic Software (1 Per Classroom)

"The average salary for a technology professional in the United States increased to $111,348 in 2022, up from $108,857 in 2021. The continued upward trend in tech salaries is a strong indicator that technology professionals remain in high demand in the U.S."

DICE 2023 TECH SALARY REPORT
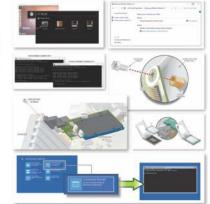
CompTIA's A+ certification is widely recognized as the industry standard for any individual interested in pursuing a career in IT. A+ Certified professionals support today's core technologies from security to networking to virtualization and more. These individuals are trusted by employers around the world to identify the go-to person in end point management & technical support roles. In addition, A+ is the only industry-recognized credential with performance-based items to prove that certified professionals can think and perform critical IT support tasks in fast-paced environments. Employers also recognize the A+ certification as a mark of a committed and dedicated IT professional who is willing to invest time and effort into acquiring new skills and knowledge. Unquestionably, the certification can lead to higher salaries and career advancement opportunities for IT professionals.

ACCESSORIES:

IC-300SETA+ A+ Certification Text and Lab Guide

13

NETWORK+ CERTIFICATION PROGRAM
DC-4000

The Marcraft Network+ program relies heavily on the Network+ Certification framework from CompTIA to ensure students are guaranteed a full-scale, comprehensive hands-on learning experience unlike any other available. Students can expect to study the configuration, management, and troubleshooting of common wired and wireless network devices. Additional focus on areas such as critical security concepts, key cloud computing practices alongside virtualization techniques and concepts to give individuals the combination of theory knowledge and hands-on skills to keep a network resilient.

CERTIFICATIONS

CompTIA Network+ Certification

Not Just a Simulation! Hands-on Labs Use the Following Equipment:

Servers, Enterprise Routers & Switches
Patch Panels
Wireless AP/Routers
Ethernet Cable & Terminations
Cable Strippers & Crimpers
110-Type & 66-Type Connection Blocks
Punchdown Tools
Cable Testers

The Marcraft Network+ Certification Course covers these topics:

Design and implement functional network
Configure and manage essential network devices
Identify benefits and drawbacks of existing networks
Troubleshoot network problems
Support the creation of virtualized networks
Implement network security, standards, and protocols
Use switches and routers to segment network traffic and create resilient networks
AND MUCH MORE!

Real World Inspired Hands-on Labs!

"The networking sector of IT has proven to be surprisingly resilient. While other hardware-dominated sectors have faltered, networking has held its own. It still boasts a sizable and dedicated community."

DATAMATION.COM

INCLUDES:

DC-4000	Networking Technology Equipment Package for 6 Student Access
DC-4001	Networking Technology Equipment Package for 12 Student Access
DC-4002	Networking Technology Equipment Package for 24 Student Access
	Each package comes with 1 Instructor's Guide and PowerPoint Presentation Media (1 Per Classroom)
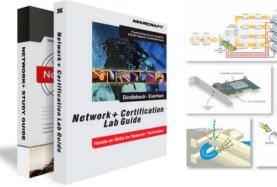
*NOTE: All Packages Require PC Workstation Computers
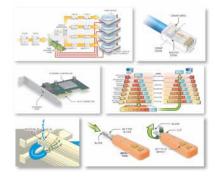
Individuals who complete the Network+ program from Marcraft can prepare for a career in IT infrastructure where they can confidently handle the responsibilities of troubleshooting, configuring and managing networks.

Network+ certified individuals will be able to confidently describe the features and functions of networking components and install, configure and troubleshoot the basic networking hardware, protocols and services that business and organizations rely on everyday. Unlike other vendor-specific networking courses, the Network+ program from Marcraft prepares you to support the network regardless of the platform. It forms the foundation students need before choosing to specialize in a vendor solution. Lastly, certified professionals can demonstrate a proficient understanding of emerging technologies, including cloud and virtualization techniques and practices.

ACCESSORIES:

DC-400SC	Server Computer (Optional)
DC-400	Network+ Text and Lab Guide

14

DIGITAL FORENSICS CERTIFICATION PROGRAM
DF-1000

Computer forensic examiners use specialized tools and practices to locate and retrieve information from computers and other digital devices that store data to determine where and how possible crimes or data breaches have occurred. They must be able to perform investigative field work at a potential crime location, secure evidence and establish chain of custody links to move evidence to a lab setting for analysis, conduct lab analysis operations and potentially present documented evidence in a legal setting.

The Marcraft Digital Forensic equipment package includes a suspect computer and peripherals, which hold various types of evidence, a forensic notebook PC with various types of forensic software and a host of additional hardware tools for carrying out the investigation and documenting the evidence.

In the Marcraft Digital Forensics course, students will work through an actual criminal case by using forensics software and hardware tools to solve the crime. Working through 12 chapters, students will investigate a crime scene, bring the evidence back into their lab to find, extract and analyze the information while creating a "chain of custody" to ensure the findings are admissible in a court of law.

CERTIFICATIONS

AccessData Certified Examiner Certification

The Marcraft Digital Forensics Certification Course covers these topics:
- Basics of Digital Forensics
- Investigative Procedures
- Data Storage
- Storage Media & Hardware Devices
- Forensics Tools
- Steganography & Multimedia Evidence
- Data Acquisition & Analysis
- Mobile Device Forensics
- Network Forensics
- Online Investigations & Email
- Preparing to Testify
- **AND MUCH MORE!**

Real World Inspired Hands-on Labs!

"By 2025, the digital forensics market is projected to be worth $6.48 billion. For those who are adept at using computers, comfortable in cyberspace and passionate about criminal justice, the digital forensics field may be promising"

MORDOR INTELLIGENCE

ACCESSORIES:

DF-100	Digital Forensics Text and Lab Guide

INCLUDES:

DF-1000	Digital Forensics Equipment Package (1 Station) Instructor's Guide Package with Forensic Write Blocker (1 Per Classroom)

CYBERSECURITY ESSENTIALS
CS-1000

Based on the National Institute of Standards (NIST) framework, Marcraft's capstone program covers all aspects contained within the Cybersecurity space. Beginning with Physical Asset Protection and finishing with Penetration Testing, this 8-station Cybersecurity Essentials program is a necessary stepping stone to any and all individuals interested in careers within the Cybersecurity ecosystem.

Marcraft's hands-on approach is highlighted in the 8 stations that allow the concepts and practices presented in theory to be tested, analyzed and confirmed in real time, using industry standard hardware and software.

CERTIFICATIONS

ISACA Cybersecurity Fundamentals Certificate Exam

CompTIA Security+ Certification

Not Just a Simulation! Hands-on Labs Use the Following Equipment:

- Security Controllers
- Security & Fire Sensors
- Surveillance Cameras & DVRs
- Servers, Switches, Routers & Firewalls
- IoT Devices
- PLC and SCADA
- Virtualization Systems
- Multiple Operating Systems

The Marcraft Cybersecurity Essentials Certification Course covers these topics:

- Infrastructure Security
- Surveillance Systems
- Local Host Security
- Local Network Security
- Internet Security
- Edge Protection
- Enterprise Network Security
- Industrial Cybersecurity Systems
- Medical Network Security
- Penetration Testing
- **AND MUCH MORE!**

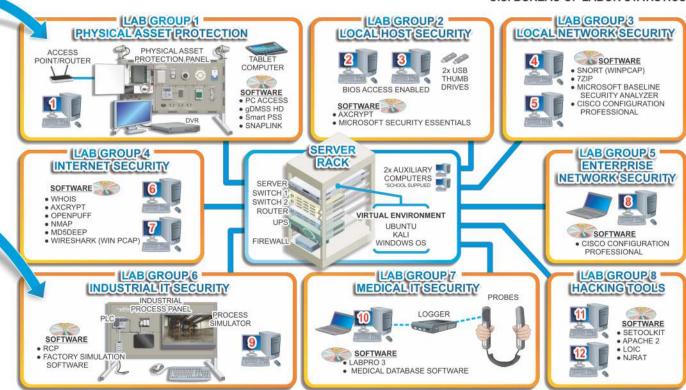## Real World Inspired Hands-on Labs!

INCLUDES:

CS-1000 Cybersecurity Essentials Equipment Rotational Package for 24 Students (Requires Dedicated PC Workstation Computers)

Instructor's Guide with PowerPoint Presentation USB Drive (1 Per Classroom)

"Employment of information security analysts is projected to grow 35 percent from 2021 to 2031, much faster than the average for all occupations."
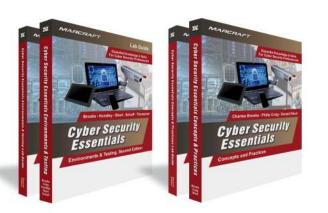
U.S. BUREAU OF LABOR STATISTICS

LAB GROUP 1 — PHYSICAL ASSET PROTECTION
ACCESS POINT/ROUTER
PHYSICAL ASSET PROTECTION PANEL
TABLET COMPUTER
DVR
SOFTWARE
- PC ACCESS
- gDMSS HD
- Smart PSS
- SNAPLINK

LAB GROUP 2 — LOCAL HOST SECURITY
BIOS ACCESS ENABLED
2x USB THUMB DRIVES
SOFTWARE
- AXCRYPT
- MICROSOFT SECURITY ESSENTIALS

LAB GROUP 3 — LOCAL NETWORK SECURITY
SOFTWARE
- SNORT (WINPCAP)
- 7ZIP
- MICROSOFT BASELINE SECURITY ANALYZER
- CISCO CONFIGURATION PROFESSIONAL

LAB GROUP 4 — INTERNET SECURITY
SOFTWARE
- WHOIS
- AXCRYPT
- OPENPUFF
- NMAP
- MD5DEEP
- WIRESHARK (WIN PCAP)

SERVER RACK
SERVER SWITCH 1
SWITCH 2
ROUTER
UPS
FIREWALL
2x AUXILIARY COMPUTERS *SCHOOL SUPPLIED
VIRTUAL ENVIRONMENT
UBUNTU
KALI
WINDOWS OS

LAB GROUP 5 — ENTERPRISE NETWORK SECURITY
SOFTWARE
- CISCO CONFIGURATION PROFESSIONAL

LAB GROUP 6 — INDUSTRIAL IT SECURITY
INDUSTRIAL PROCESS PANEL
PLC
PROCESS SIMULATOR
SOFTWARE
- RCP
- FACTORY SIMULATION SOFTWARE

LAB GROUP 7 — MEDICAL IT SECURITY
PROBES
LOGGER
SOFTWARE
- LABPRO 3
- MEDICAL DATABASE SOFTWARE

LAB GROUP 8 — HACKING TOOLS
SOFTWARE
- SETOOLKIT
- APACHE 2
- LOIC
- NJRAT

PACKAGE ACCOMMODATES 24 STUDENTS, EXPANDABLE

"The average cost of insider-related cyber incidents was $7.68 million, and 60% of companies go out of business six months after a security breach."

ASHRAE JOURNAL NEWSLETTER, SEPTEMBER 14, 2021

THE ADVANCED CYBERSECURITY COURSES CAN BE EASILY ADDED TO THIS COURSE

ACCESSORIES:

CS-100CP Cybersecurity Essentials Concepts and Practices Text & Lab Book

CS-100ET Cybersecurity Essentials Environments and Testing Text & Lab Book

20

21

NORTH PARK INNOVATIONS GROUP, INC. P.O. Box 900 | 6442 Route 242 East | Ellicottville, NY 14731 | 716.699.2031 | www.marcraft.com

NORTH PARK INNOVATIONS GROUP, INC. P.O. Box 900 | 6442 Route 242 East | Ellicottville, NY 14731 | 716.699.2031 | www.marcraft.com

INDUSTRIAL NETWORKS CYBERSECURITY
ADVANCED CYBERSECURITY
CS-3000

The Industrial Control Systems (ICS) and Operational Technology (OT) network security environment is built on devices, protocols, connectivity specifications and requirements that do not exist in the SOHO or Enterprise network environments.

In the Marcraft Industrial Networks Cybersecurity Course students will be introduced to ICS embedded devices including PLCs, RTUs and IEDs. Students will also become acquainted with industrial network protocols including - Modbus, DNP3, BacNet, etc. Other key topics include ICS/Utility network communication methods and the real-time IAC tenets associated with these networks.

CERTIFICATIONS

SANS Institute GICSP Certification

Not Just a Simulation! Hands-on Labs Use the Following Equipment:
- PLCs
- HMI & SCADA Systems
- Data Historians
- Pentesting Software
- Servers, Enterprise Routers, and Switches
- Firewall Appliances

The Marcraft Industrial Network Cybersecurity Certification Course covers these topics:
- Global Security Standards, Practices, & Regulations
- Open & Closed Loop Control Systems
- Dedicated & Distributed Control Systems
- Industrial Sensors
- Final Control Elements/Actuators
- Industrial Process Controllers
- Field Devices & Industrial Networks
- SCADA
- Common Industrial Network Structures
- Industrial Network Communication Media
- Asynchronous Serial Standards
- Remote Access Communication Media
- Industrial Network Protocols
- Utility Collection & Control Networks
- Customer Data Management Systems
- Industrial and Utility Network Security
- Boundary Protection
- Wide Area Network Security
- ICS Risk Assessments
- **AND MUCH MORE!**

Real World Inspired Hands-on Labs!

ALSO AVAILABLE AS AN ADD-ON TO THE CS-1000 CYBERSECURITY ESSENTIALS COURSE

> "… Industrial Control Systems (ICS), which constitute the "soft underbelly" of the American economy and defense, can enable a "Cyber Pearl Harbor" to occur without having the capability of even knowing the impacts were cyber-induced…"

STANFORD UNIVERSITY CENTER FOR INTERNATIONAL SECURITY AND COOPERATION

LAB ACTIVITIES

Basic ICS Networking
- Introduction to PLCs, SCADA, and HMI Systems
- Stand-Alone and Multiple Zone PLC Control
- SCADA/HMI Systems
- Data Historian Servers

IT/OT Vulnerabilities
- Exploiting OT Network Vulnerabilities
- Physical MitM Attacks
- IT/OT Reconnaissance
- Exploiting IT/OT Network Vulnerabilities

Cyber Vulnerabilities
- Attacking the Front Door and an Outward Facing Web Server
- Spear Phishing Attacks
- Installing a Reverse Shell and Exploiting Hashes
- Wireless Perimeter Attacks and WiFi Exploits

Defending the OT Network
- End Point Hardening and DoD Secure Host Compliance
- Network Switch Security
- IT/OT Network Segmentation, VLANs, and Security Routing
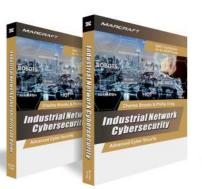- Working with Firewalls and DMZs

Incident Response and Handling
- Incident Response Handling
- Security Logging and Auditing
- Disaster Recovery (Backup and Restore)

INCLUDES:

CS-3000	Industrial Security System Equipment Package (Requires Dedicated PC Workstation Computers)
	1 Industrial & Utility Cybersecurity Trainer
	Instructors Guide with PowerPoint Presentation USB Drive (1 Per Classroom)

ACCESSORIES:

CS-300	Industrial Security System Text & Lab Book

ADVANCED CYBERSECURITY CERTIFICATIONS

For students who want to advance in an IT career, they need a solid understanding of computer and network security. Adding security certifications to their portfolio opens doors for employment opportunities and a higher salary. These days, even entry level positions are requiring some background in cybersecurity. Organizations are finding that putting more emphasis on security skills for IT professionals makes financial sense when compared to the repercussions of a data breach.

ALSO AVAILABLE AS ADD-ONS TO THE CS-1000 CYBERSECURITY ESSENTIALS COURSE

Real World Inspired Hands-on Labs!

ADVANCED ENTERPRISE CYBERSECURITY

ADVANCED CYBERSECURITY
CS-2000

The Advanced Enterprise Cybersecurity Course prepares students for network administration and security positions in small, medium and enterprise sized networks.

Students will acquire the knowledge and skills required to install and configure systems to secure applications, networks, and devices. They will perform threat analysis and respond with appropriate risk mitigation techniques and activities.

In addition, they will work with network security policies, perform risk assessments, and examine incident response plans.

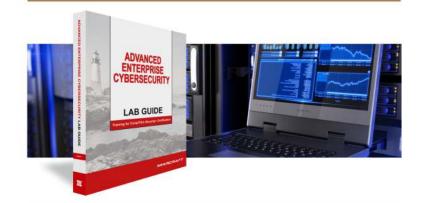### CERTIFICATIONS

CompTIA Security+ Certification

Certified Information Systems Security Professional

INCLUDES:

CS-2000	Enterprise Network Security Equipment Package for 24 Students (Requires Dedicated PC Workstation Computers)
	Instructor's Guide with PowerPoint Presentation USB Drive (1 Per Classroom)

ACCESSORIES:

CS-200	Enterprise Network Security Text/Lab Book

18

CYBERSECURITY ANALYST
ADVANCED CYBERSECURITY
CS-4000

The Marcraft System Analyst program prepares students for CySA job roles including - Security Operations Center Analyst, network administrators, incident response team members, threat intelligence analysts and Cybersecurity Analysts. In this course, students will learn to configure and use threat detection tools, perform data analysis and interpret the results to identify vulnerabilities, threats, and risks to an organization with the end goal of securing and protecting applications and systems within an organization.

Students will build and operate honeypots; install, configure, and operate SEIM systems; conduct threat and vulnerability operations; perform incident response functions; and identify and monitor vulnerabilities across a network.
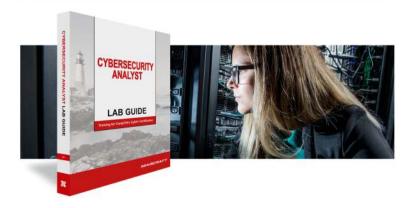
CERTIFICATIONS

CompTIA Cybersecurity Analyst (CySA+) Certification

INCLUDES:

CS-4000	Cybersecurity Analyst Equipment Package for 24 Students (Requires Dedicated PC Workstation Computers)
	Instructor's Guide with PowerPoint Presentation USB Drive (1 Per Classroom)

ACCESSORIES:

CS-400	Cyber Security Analyst Text/Lab Book

CERTIFIED PENTESTER
ADVANCED CYBERSECURITY
CS-5000

The Marcraft Certified Pentester Course provides students with the knowledge and skills required to perform remote and local reconnaissance operations that probe targeted networks for available attack surfaces. They will also be introduced to tools and techniques for creating exploits, delivering the exploit to the target from different locations (across the internet, from close proximity to the target, from inside the target, and inside the network) and establishing command and control after the initial exploit.

The students will be introduced to advanced hacking techniques and tools to build on their existing networking and security knowledge.

Penetration testing also requires a good understanding of the law to keep all activities legal and in accordance with any legally binding contracts or agreements.

CERTIFICATIONS
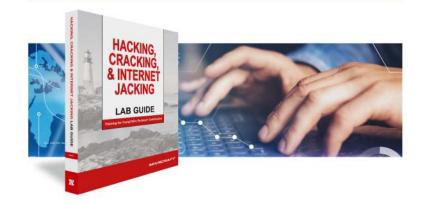
CompTIA Pentest+ Certification

INCLUDES:

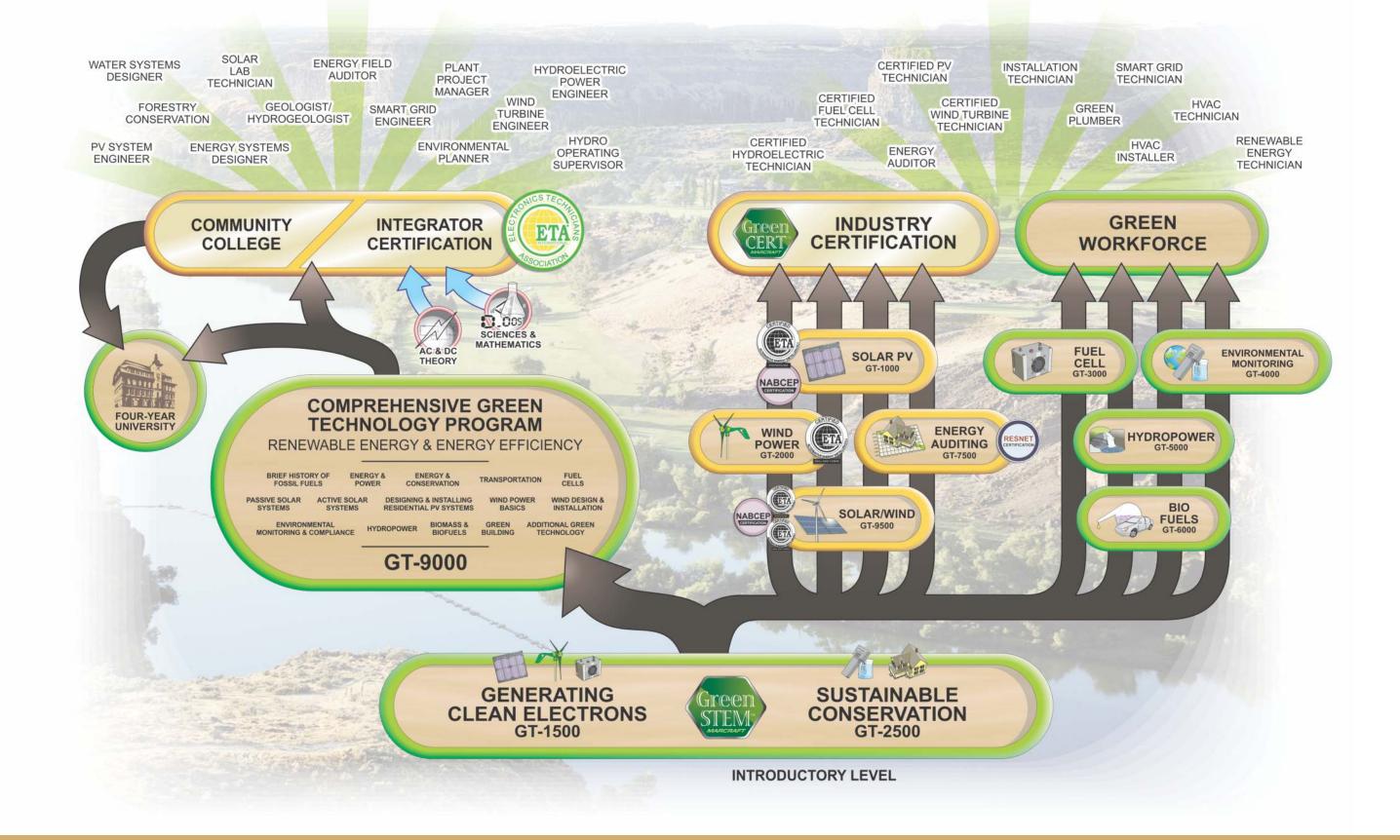|	
CS-5000	Certified Pentester Equipment Package for 24 Students (Requires Dedicated PC Workstation Computers)
	Instructor's Guide with PowerPoint Presentation USB Drive (1 Per Classroom)

ACCESSORIES:

CS-500	Certified Pentester Text/Lab Book

GREEN TECHNOLOGY CAREER PATHS

WATER SYSTEMS DESIGNER
SOLAR LAB TECHNICIAN
ENERGY FIELD AUDITOR
PLANT PROJECT MANAGER
HYDROELECTRIC POWER ENGINEER
CERTIFIED PV TECHNICIAN
INSTALLATION TECHNICIAN
SMART GRID TECHNICIAN

FORESTRY CONSERVATION
GEOLOGIST/ HYDROGEOLOGIST
SMART GRID ENGINEER
WIND TURBINE ENGINEER
CERTIFIED FUEL CELL TECHNICIAN
CERTIFIED WIND TURBINE TECHNICIAN
GREEN PLUMBER
HVAC TECHNICIAN

PV SYSTEM ENGINEER
ENERGY SYSTEMS DESIGNER
ENVIRONMENTAL PLANNER
HYDRO OPERATING SUPERVISOR
CERTIFIED HYDROELECTRIC TECHNICIAN
ENERGY AUDITOR
HVAC INSTALLER
RENEWABLE ENERGY TECHNICIAN

COMMUNITY COLLEGE

INTEGRATOR CERTIFICATION

ELECTRONICS TECHNICIANS ASSOCIATION — ETA INTERNATIONAL

INDUSTRY CERTIFICATION — Green CERT MARCRAFT

GREEN WORKFORCE

AC & DC THEORY

0.005 SCIENCES & MATHEMATICS

FOUR-YEAR UNIVERSITY

COMPREHENSIVE GREEN TECHNOLOGY PROGRAM
RENEWABLE ENERGY & ENERGY EFFICIENCY

BRIEF HISTORY OF FOSSIL FUELS	ENERGY & POWER	ENERGY & CONSERVATION	TRANSPORTATION	FUEL CELLS
PASSIVE SOLAR SYSTEMS	ACTIVE SOLAR SYSTEMS	DESIGNING & INSTALLING RESIDENTIAL PV SYSTEMS	WIND POWER BASICS	WIND DESIGN & INSTALLATION
ENVIRONMENTAL MONITORING & COMPLIANCE	HYDROPOWER	BIOMASS & BIOFUELS	GREEN BUILDING	ADDITIONAL GREEN TECHNOLOGY

GT-9000

CERTIFIED ETA — NABCEP CERTIFICATION
SOLAR PV GT-1000

FUEL CELL GT-3000

ENVIRONMENTAL MONITORING GT-4000

WIND POWER GT-2000 — CERTIFIED ETA

ENERGY AUDITING GT-7500 — RESNET CERTIFICATION

HYDROPOWER GT-5000

NABCEP CERTIFICATION — CERTIFIED ETA
SOLAR/WIND GT-9500

BIO FUELS GT-6000

GENERATING CLEAN ELECTRONS GT-1500

Green STEM MARCRAFT

SUSTAINABLE CONSERVATION GT-2500

INTRODUCTORY LEVEL

GENERATING CLEAN ELECTRONS
GT-1500

The GT-1500 Clean Electron Generation course provides students an introductory, hands-on, interactive experience with the three leading sources of alternative energy generation technologies: Wind Power, Solar Power, and Fuel Cells. Upon completion, students will confidently be able to identify the individual components of each power generation approach and articulate their function and contribution to the overall process. Will prepare students for full-scale programs ahead.

Not Just a Simulation! Hands-on Labs Use the Following Equipment:

- Photovoltaic Panels
- Wind Turbines
- Diversion Load Controllers
- Battery Storage System
- Electrolyzers
- Fuel Cells
- Inverters
- Control Panel Meters, Switches, & Fuses
- Multimeters

The Marcraft Generating Clean Electrons Course covers these topics:

Wind Power
Installing and Testing a Wind Turbine
Configuring and Testing Off-Grid Installations
Design and Create a Wind Turbine Power System
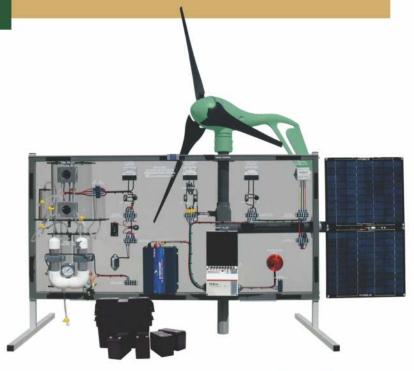
Solar Power
Installing, Combining, and Testing Solar Panels
Configuring and Testing Off-Grid Installations
Design and Create a Solar Charging System for
    Portable Hand-Held Devices

Fuel Cells
Connecting a Fuel Cell for Electrical Generation
Configuring and Testing Off-grid Installations
Combining Wind and Solar Power Systems
Configuring and Testing Combined Alternative
    Energy Systems for Off-Grid Operations
AND MUCH MORE!

Real World Inspired Hands-on Labs!

INCLUDES:

GT-1500	Clean Electron Generation Panel
	Instructor's Guide with PowerPoint Presentation Media (1 Per Classroom)

ACCESSORIES:

GT-15T	GREENSTEM Toolkit for the GT-1500
GT-15C	GREENSTEM Consumable Kit for the GT-1500
GT-150	Generating Clean Electrons Text and Lab Guide
GT-150SC	SCADA Package

SUSTAINABLE CONSERVATION
GT-2500

The GT-2500 Sustainable Conservation Technology Panel provides students an introductory hands-on interactive experience with multiple energy design, monitoring and auditing processes and technologies. As important as generating power and energy can be, it is equally important to understand how we can conserve and improve upon our current processes. With identification and analysis techniques learned throughout the course, students will understand how new techniques such as LEED design are improving the efficiency of our energy usage.

Not Just a Simulation! Hands-on Labs Use the Following Equipment:
- Passive Solar Water Heaters
- Data Loggers
- Temperature Sensors
- Wind Speed Sensors
- Sound Sensors
- Light Sensors
- Humidity Sensors
- Ph Sensors
- Dissolved Oxygen Sensors
- Computer Aided Drafting & Design Software

The Marcraft Sustainable Conservation Course covers these topics:

Energy Auditing
- Measuring Electrical Consumption of Devices
- Calculating Electrical Loads
- Implementing Power Saving Options
- Evaluating Insulation Values

Environmental Monitoring
- Gathering Data with Portable Datalogger
- Evaluating Soil and Water as Insulation
- Charting Temperature Changes Throughout a Structure with Different Insulation and Heating Conditions

Sustainable Architecture
- Structural Building Components' Affect on Energy Consumption
- Planning Sustainable Buildings
- Passive Solar Lighting and Heating Techniques
- LEEDS Standards
- **AND MUCH MORE!**

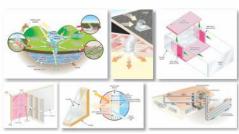## Real World Inspired Hands-on Labs!

INCLUDES:

GT-2500	Sustainable Conservation Technology Panel (Requires PC Workstation Computers)
	Instructor's Guide with PowerPoint Presentation Media (1 Per Classroom)

ACCESSORIES:

GT-250	Sustainable Conservation Text and Lab Guide
GT-250SC	SCADA Package

SOLAR PHOTOVOLTAIC INSTALLER CERTIFICATION PROGRAM
GT-1000

Real World Inspired Hands-on Labs!

According to the 2017 US Energy and Employment Report, more people now work in the US solar industry than in oil, natural gas, and coal extraction - combined. A recent study by The Solar Foundation (TSF) study shows that solar jobs are growing at a rate 10 times the national average.

The Solar PV Technology Training Panel allows instructors to teach every aspect of solar power to their students. From installation, to configuration, to AC and DC conversion, students can learn how each of the features of solar power work together. Using the NABCEP and ETA certifications as guiding principles, students will gain valuable knowledge and experience in topics such as solar resources and principles; selection identification; proper installation sequence, performance characteristics and troubleshooting methods; permitting best safety practices; and economic impact.

CERTIFICATIONS:

ETA Photovoltaic Installer Level 1

NABCEP Exam

Not Just a Simulation! Hands-on Labs Use the Following Equipment:
- Photovoltaic Panels
- Load Diverters
- Inverters
- Battery Storage System
- Control Panel Meters, Switches, & Fuses
- Multimeters

The Marcraft Solar Photovoltaic Installer Certification Course covers these topics:
- Energy and Power
- Passive Solar Systems
- Active Solar Systems
- Troubleshooting PV Systems
- Building Codes and Compliance
- Understanding Blueprints
- Design & Installation of Residential Scale Photovoltaic Systems
- **AND MUCH MORE!**

INCLUDES:

GT-1000	Solar PV Technology Panel
	Instructor's Guide with PowerPoint Presentation Media (1 Per Classroom)

ACCESSORIES:

GT-100	Solar PV Text and Lab Guide
GT-10T	Solar Panel Tool Kit
GT-10C	Solar Panel Consumable Set
GT-100SC	SCADA Package

23

WIND TURBINE INSTALLER CERTIFICATION PROGRAM
GT-2000

Wind turbines, whether large or small, are increasingly popular for energy generation, especially in off-grid environments. As a result, manufacturers are constantly increasing development efforts to develop the next generation of smaller wind turbines. Marcraft's Wind Turbine training panel will prepare students on topics such as the theory of wind energy and electrical generation; site evaluation; design and selection of wind systems; proper installation, components, and troubleshooting methods; safety; finance; and environmental assessment and management.

CERTIFICATIONS:

ETA Small Wind Turbine Installer Level 1

Not Just a Simulation! Hands-on Labs Use the Following Equipment:
- Wind Turbines
- Diversion Load Controllers
- Battery Storage System
- Inverters
- Control Panel Meters, Switches, & Fuses
- Multimeters

The Marcraft Wind Turbine Installer Certification Course covers these topics:
- Energy and Power
- Wind Power Technology
- Wind Turbine Design
- Troubleshooting Wind Turbine Systems
- Building Codes and Compliance
- Understanding Blueprints
- Design & Installation of Residential Scale Wind Turbine Systems
- **AND MUCH MORE!**

Real World Inspired Hands-on Labs!

INCLUDES:

GT-2000	Wind Turbine Technology Panel
	Instructor's Guide with PowerPoint Presentation Media (1 Per Classroom)

ACCESSORIES:

GT-200	Wind Turbine Text and Lab Guide
GT-20T	Wind Panel Tool Kit
GT-20C	Wind Panel Consumable Set
GT-2000AC	Advanced Controls Hardware
GT-200SC	SCADA Package

SOLAR/WIND ENERGY CERTIFICATION PROGRAM
GT-9500

Best of Two Worlds! Combine solar and wind technology into one comprehensive learning environment focusing on the best in new green technologies. The best of the GT-1000 and GT-2000 in one panel and one curriculum.

CERTIFICATIONS:

ETA Photovoltaic Installer - Level 1

ETA Small Wind Turbine Installer - Level 1

NABCEP Exam

Not Just a Simulation! Hands-on Labs Use the Following Equipment:

Solar Photovoltaic Panels
Wind Turbines
Diversion Load Controllers
Battery Storage System
Inverters
Control Panel Meters, Switches, & Fuses
Multimeters

The Marcraft Solar/Wind Installer Certification Course covers these topics:

Energy and Power
Passive Solar Systems
Active Solar Systems
Troubleshooting PV Systems
Wind Power Technology
Wind Turbine Design
Troubleshooting Wind Turbine Systems
Building Codes and Compliance
Understanding Blueprints
Design & Installation of Residential Scale Photovoltaic Systems
Design & Installation of Residential Scale Wind Turbine Systems
AND MUCH MORE!

Real World Inspired Hands-on Labs!

REAR VIEW

INCLUDES:

GT-9500 Solar/Wind Energy Training System
Solar & Wind Instructor's Guides with PowerPoint Presentation Media (1 Per Classroom)

ACCESSORIES:

GT-100	Solar PV Text and Lab Guide
GT-200	Wind Turbine Text and Lab Guide
GT-20T	Wind Panel Tool Kit
GT-20C	Wind Panel Consumable Set
GT-10T	Solar Panel Tool Kit
GT-10C	Solar Panel Consumable Set
GT-2000AC	Advanced Controls Hardware
GT-950SC	SCADA Package

25

FUEL CELL TRAINING PROGRAM
GT-3000

The Marcraft Fuel Cell Technology training program is designed to provide students with a comprehensive understanding of fuel cell technology. The program covers the fundamentals of fuel cell systems, including their construction, operation, and maintenance. Students will gain experience working with data acquisition software, graphing and scientific calculators, mechanical drawings and digital multimeters. A Fuel Cell Technician may work in transportation or portable and stationary applications.

Real World Inspired Hands-on Labs!

Not Just a Simulation! Hands-on Labs Use the Following Equipment:

- Photovoltaic Panels
- Electrolyzers
- Fuel Cells
- Inverters
- Control Panel Meters, Switches, & Fuses
- Multimeters

The Marcraft Fuel Cell Training Course covers these topics:

- History of Fossil Fuels
- Environmental Concerns
- Electric Grid
- Alternative Energy Sources
- Types of Energy
- Potential and Kinetic Energy
- Voltage and Current
- Electrical Loads
- Electrical Power Consumption
- Power Math
- Making Electrical Connections
- History of Fuel Cells
- Hydrogen Production, Storage and Transportation
- Types of Fuel Cells
- How Fuel Cells Work
- Fuel Cell Systems
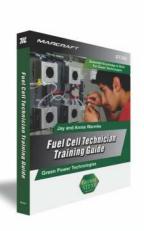- Future of Fuel Cells
- **AND MUCH MORE!**
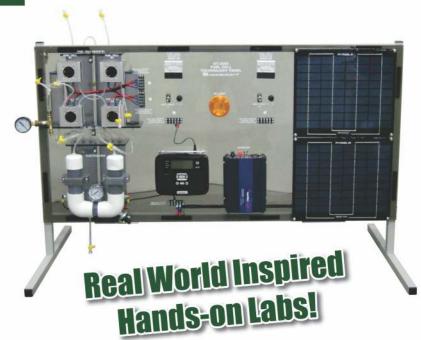
INCLUDES:

GT-3000	Fuel Cell Technology Panel
	Instructor's Guide with PowerPoint Presentation Media (1 Per Classroom)

ACCESSORIES:

GT-300	Fuel Cells Text and Lab Guide
GT-30T	Fuel Cell Panel Tool Kit
GT-30C	Fuel Cell Panel Consumable Set
GT-300SC	SCADA Package

HYDROPOWER TRAINING PROGRAM
GT-5000

Marcraft's Hydropower training panel will ensure individuals are trained in all aspects of the operation and maintenance of a hydro generation plant, as well as flow control of the river system and tributaries. They will confidently be able to monitor equipment conditions and performance, accomplish preventive and minor maintenance routines, and conduct process control and failure analyses. Students will operate plant equipment such as turbines, pumps, valves, gates, fans, electric control boards, and battery banks.

Real World Inspired Hands-on Labs!

Green STEM
MARCRAFT

Not Just a Simulation! Hands-on Labs Use the Following Equipment:

- Multimeters
- Motors and Gears
- Water Wheels
- Control Panel Meters, Switches, & Fuses
- Flow Meters

The Marcraft Hydropower Training Course covers these topics:

- Types of Energy
- Potential and Kinetic Energy
- Voltage and Current
- Electrical Loads
- Electrical Power Consumption
- Power Math
- Making Electrical Connections
- History of Hydropower
- Hydropower Terms
- Measuring Head and Flow
- Microhydropower Systems
- Turbines
- Maintenance
- Economics of Microhydropower
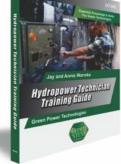- **AND MUCH MORE!**

INCLUDES:

| GT-5000 | Hydropower Technology Panel |
| | Instructor's Guide with PowerPoint Presentation Media (1 Per Classroom) |

ACCESSORIES:

| GT-500 | Hydropower Text and Lab Guide |
| GT-500SC | SCADA Package |

BIOFUELS TRAINING PROGRAM
GT-6000

Marcraft Biofuels Training Program is designed to provide students with a comprehensive understanding of biofuel technology. Within the GT-6000 training panel, students will understand the various ways of making biofuels including chemical reactions, fermentation, and heat to break down the starches, sugars, and other molecules in plants. The resulting products are then refined to produce a fuel that cars or other vehicles can utilize for power. In this program, students will work with and understand a variety of fuel sources including corn, sugarcane, soybeans and other plants that are used to produce biofuels.

Not Just a Simulation! Hands-on Labs Use the Following Equipment:

- Stills
- Hydrometers
- Biodiesel Production Equipment
- Biofuel-Powered Radio Controlled Truck

The Marcraft Biofuels Training Course covers these topics:

- Types of Energy
- Potential and Kinetic Energy
- Power Math
- Transportation Fuels
- Biomass and Biofuels Basics
- Types of Energy Produced
- Pyrolysis
- Gasification
- Anaerobic Digestion
- Ethanol, Biodiesel & Green Diesel
- Limitations to Overcome
- Wood Gas Generators
- Backyard Ethanol
- Backyard Biodiesel
- Safety and Quality Control
- By-product Management
- **AND MUCH MORE!**

Real World Inspired Hands-on Labs!

INCLUDES:

GT-6000	Biofuel Technology Panel
	Biofuels-Powered Radio Controlled Truck
	Instructor's Guide with PowerPoint Presentation Media (1 Per Classroom)

ACCESSORIES:

GT-600	Bio-Fuels Text and Lab Guide
GT-60C	Bio-Fuels Consumable Set
GT-600SC	SCADA Package

ENVIRONMENTAL MONITORING
GT-4000

The Environmental Monitoring (EM) Training Program enables students to study the human effect on our environment. Hands-on labs introduce students to data loggers, sensors, and lab equipment to perform the necessary tests on air and water to establish quality, identify heavy metals, eliminate noise pollution, and filter out light and UV radiation, to name a few. EM technicians provide critical data for environmental scientists and specialists.

Real World Inspired Hands-on Labs!

Not Just a Simulation! Hands-on Labs Use the Following Equipment:

- Data Loggers
- Temperature Sensors
- Wind Speed Sensors
- Sound Sensors
- Light Sensors
- Humidity Sensors
- pH Sensors
- Dissolved Oxygen Sensors
- Carbon Dioxide Sensors

The Marcraft Environmental Monitoring Course covers these topics:

- Monitoring Air Quality
- Radon Gas
- Carbon Monoxide and Combustible Gases
- Carbon dioxide
- Volatile Organic Compounds
- Airborne Lead
- Asbestos
- Monitoring Water Quality
- Radon in Water
- Heavy Metals
- Pesticides
- Environmental pH Water Assessments
- Sound and Noise Pollution
- Light and UV Radiation
- Environmental pH Soil Sampling
- Lead Pollution in Soil
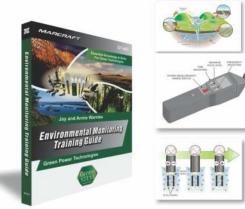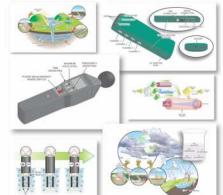- **AND MUCH MORE!**

INCLUDES:

GT-4000	Environmental Monitoring Technology Module (Requires PC Workstation Computers)
	Instructor's Guide with PowerPoint Presentation Media (1 Per Classroom)

ACCESSORIES:

GT-400	Environmental Monitoring Text and Lab Guide
GT-40C	Environmental Monitoring Consumable Set

29

ENERGY AUDITING CERTIFICATION
GT-7500

Establish working knowledge of standard energy auditing practices and LEED certification standards. Be able to calculate the energy efficiencies of lighting as well as evaluate the climate control capabilities of structural designs and insulation materials. Effectively use current technologies available including infrared cameras for evaluation of both residential and commercial buildings.

CERTIFICATIONS:

RESNET Home Energy Rater Certification

Not Just a Simulation! Hands-on Labs Use the Following Equipment:
- Model House with Heating System
- Infrared Camera
- Passive Heating System
- Different Insulation
- Different Types of Light Bulbs

The Marcraft Energy Auditing Certification Course covers these topics:
- Sustainable Architecture
- Residential and Commercial Structures
- Energy and Power
- Energy Audits
- Insulation, Windows, and Ventilation
- Lighting
- Hot Water Heaters
- Passive Solar Systems
- Green Design Considerations
- Building Codes and Compliance
- Understanding Blueprints
- **AND MUCH MORE!**

Real World Inspired Hands-on Labs!

INCLUDES:

GT-7500	**Energy Auditing Technology Panel (Requires PC Workstation Computers)**
	IR Camera
	Instructor's Guide with PowerPoint Presentation Media (1 Per Classroom)

ACCESSORIES:

GT-750	**Energy Auditing Text and Lab Guide**
GT-750SC	**SCADA Package**

30

GREEN TECHNOLOGY CONCEPTS AND PRACTICES
GT-900T

This Marcraft GreenSTEM Training Guide sets the stage introducing the principles that led us to the quest for rapid expansion of green technologies - the worldwide energy crisis, global warming, rapidly expanding middle classes around the world, diminishing worldwide resources, and global power economics. In subsequent chapters, basic electrical principles are covered along with the theory of each major green technology, which is covered in detail. In each case, you will learn the underlying science of the technology, the application of the science to these technologies, math principles associated with the technology as well as engineering and design principles required to implement and scale the technology.

The Marcraft Green Technology Concepts and Practices Text Book covers these topics:
- Solar (Photovoltaic) Power (Design and Installation)
- Solar Thermal (Solar Hot Water)
- Small Wind Power (Design and Installation)
- Fuel Cell Technology
- Biofuels (Ethanol and Biodiesel) and Biomass
- Micro-Hydro Power Systems
- Energy Conservation Techniques
- Energy Auditing
- Green Building Concepts
- Transportation Issues
- Environmental Compliance and Monitoring
- Ocean Energy, Geothermal Energy, and Nuclear Energy

AND MUCH MORE!

INCLUDES:

GT-900T	Green Technology Concepts & Practices Text Book

SCADA
SC-1000

SCADA (Supervisory Controls And Data Acquisition) systems are comprised of both hardware and software used to control processes as well as acquire all necessary data needed for future analysis, from one location.

This functionality can be added to all Marcraft Green Technologies Panels and/or Programs with the exception of the GT-4000 trainer. By attaching the SCADA-Pro interface and sensors to the back of the panel, a computer can then be connected to the SCADA-Pro interface. Using the provided software, students can monitor multiple measurements in real time.

MARCRAFT RENEWABLE ENERGY TECHNOLOGY PANELS

Sensor Types:
- DC Current
- DC Voltage
- AC Current
- AC Voltage
- Temperature
- Pressure
- RPM
- Flow Rate

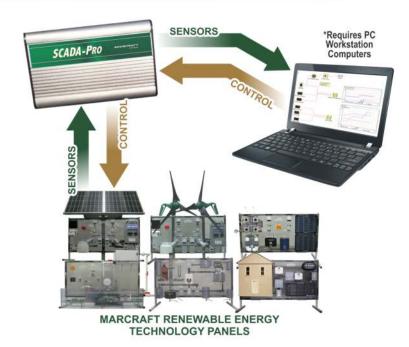**Data Acquisition & Control Buildable Systems:**
- On/Off
- Digital Logic
- Proportional
- Derivatives
- Integral Controls
- Combinations

AVAILABLE ON THESE PANELS:

GT-100SC	SCADA for the GT-1000
GT-150SC	SCADA for the GT-1500
GT-200SC	SCADA for the GT-2000
GT-250SC	SCADA for the GT-2500
GT-300SC	SCADA for the GT-3000
GT-500SC	SCADA for the GT-5000
GT-600SC	SCADA for the GT-6000
GT-750SC	SCADA for the GT-7500
GT-950SC	SCADA for the GT-9500

STS BASIC CERTIFICATION PROGRAM
STS-1000

Teach students to install and interconnect residential electronic communications, computer, control and entertainment equipment. These expert training systems are the perfect addition to existing construction or electronics program.

Smart Technology Systems (STS) is a professional certification for those who design and oversee the installation and integration of electronics systems in residences and light commercial buildings. In a modern integrated environment, these system are associated with the facility's SOHO networks – both wired and wireless.

CERTIFICATIONS:

ETA Basic Smart Technology Systems

Not Just a Simulation! Hands-on Labs Use the Following Equipment:

- Integration Controllers
- Distribution Boards
- Power Injectors & IR Repeaters
- Phone Line Simulators
- Coaxial Splitters
- 110-Type & 66-Type Connection Blocks
- Cable Testers
- Home Routers
- **AND MUCH MORE!**

The Marcraft STS Basic Certification Course covers these topics:

- Protective Gear & Protection
- Safe Tool and Equipment Use
- OSHA Regulations
- Basic First Aid & CPR
- Meters, Circuit Breakers & Branch Circuits
- NEC Wire Standards
- Wiring Load Calculations
- Light Fixtures & Light Controls
- Grounding & Bonding
- Basic Hand Tools & Specialized Test Tools
- Cable Pulling
- Labeling and Documentation
- Structured Wiring Standards
- Wires, Connectors & Terminations
- Category Wiring Standards
- Introduction to Blueprints
- New Construction Rough-in Techniques
- Retrofit Installation Applications
- Customer Service Skills
- Troubleshooting Essentials
- **AND MUCH MORE!**

Real World Inspired Hands-on Labs!

INCLUDES:

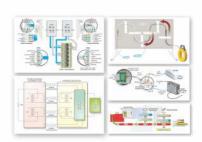|	
RS-500	Test Wall & Peripherals
RS-200	Low Voltage Wiring Lab Panel
RS-8000	Residential Networking Station (Requires Two PC Workstations)
RS-4000	Home Integration Panel
RS-100IG	Instructor's Guide with PowerPoint Presentation Media (1 Per Classroom)

ACCESSORIES & ENDORSEMENT PACKAGES:

RS-100BIG	STS BASIC Text and Lab Guide
RS-400	Consumables Kit
RS-450	STS Tool Kit
RS-6000	STS Audio/Video Endorsement (AV) Package
RS-8000	STS Computer Networking (CN) Endorsement Package
RS-3000	STS Environmental Controls (EC) Endorsement Package
RS-9000	STS Security & Surveillance (SS) Endorsement Package
	(More Endorsement Info on Next Pages)

STS ENDORSEMENT PACKAGE

In addition to the BASIC STS Certification, it is possible to obtain additional endorsements for more specialized areas of home electronics integration.

NOTE: Requires the RS-1000

CERTIFICATIONS:

ETA Smart Technology Systems Audio-Video Endorsement (AV)

ETA Smart Technology Systems Computer Networking Endorsement (CN)

ETA Smart Technology Systems Environmental Controls Endorsement (EC)

ETA Smart Technology Systems Security-Surveillance Endorsement (SS)

Real World Inspired Hands-on Labs!

INCLUDES:

RS-6000	Audio-Video System Lab Panel
RS-8000	Residential Networking Equipment Package (Requires 2 PC Workstation Computers)
RS-3000	Multi-Zone HVAC System Panel
RS-7000	Residential Power & Control System Panel
RS-9000	Security Installer Panel (Requires a PC Workstation Computer)
RS-100EIG	STS Endorsements Instructor's Guides with PowerPoint Presentation Media (1 Per Classroom)

ACCESSORIES:

RS-600E	STS AV Theory and Lab Guide
RS-800E	STS CN Theory and Lab Guide
RS-300E	STS EC Theory and Lab Guide
RS-900E	STS SS Theory and Lab Guide

STS AUDIO/VIDEO ENDORSEMENT
RS-6000

STS professionals that possess the Audio/Video (AV) Endorsement know about monitors, speakers, amplifiers, distribution systems and antennas. They also understand acoustics and the electrical signals used by these devices.

NOTE: Requires the RS-1000

CERTIFICATIONS:

ETA Smart Technology Systems Audio-Video Endorsement (AV)

INCLUDES:

RS-6000	Audio-Video System Lab Panel
	Instructor's Guide with PowerPoint Presentation Media (1 Per Classroom)

ACCESSORIES:

RS-600E	STS AV Theory and Lab Guide

33

STS COMPUTER NETWORKING ENDORSEMENT
RS-8000

With the Computer Networking (CN) Endorsement, STS professionals demonstrate advanced knowledge of computer networks, networking hardware, and communication wiring. They should also know how to configure networks and devices.

NOTE: Requires the RS-1000

CERTIFICATIONS:

ETA Smart Technology Systems
Audio-Video Endorsement (AV)

INCLUDES:

RS-8000	Residential Networking Equipment Package (Requires 2 PC Workstation Computers)
	Instructor's Guide with PowerPoint Presentation Media (1 Per Classroom)

ACCESSORIES:

RS-800E	STS CN Theory and Lab Guide

STS ENVIRONMENTAL CONTROLS ENDORSEMENT
RS-8500

The Environmental Controls (EC) Endorsement show that an STS professional has studied lighting and HVAC controls, along with controls for other features such as remote door entry, energy, curtains, aquariums, pools, ponds, water fountains and water sprinklers.

NOTE: Requires the RS-1000

CERTIFICATIONS:

ETA Smart Technology Systems
Audio-Video Endorsement (AV)

INCLUDES:

RS-3000	Multi-Zone HVAC System Panel
RS-7000	Residential Power & Control System Panel
	Instructor's Guide with PowerPoint Presentation Media (1 Per Classroom)

ACCESSORIES:

RS-300E	STS EC Theory and Lab Guide

STS SECURITY & SURVEILLANCE ENDORSEMENT
RS-9000

By obtaining the STS Security & Surveillance (SS) Endorsement, STS professionals show proficiency installing, configuring, and troubleshooting security, fire, and surveillance systems.

NOTE: Requires the RS-1000

CERTIFICATIONS:

ETA Smart Technology Systems
Audio-Video Endorsement (AV)

INCLUDES:

RS-9000	Security Installer Panel (Requires a PC Workstation Computer)
	Instructor's Guide with PowerPoint Presentation Media (1 Per Classroom)

ACCESSORIES:

RS-900E	STS SS Theory and Lab Guide

FIBER OPTICS INSTALLER CERTIFICATION COURSE
DC-6000

The Complete Fiber Optic Installers Certification Course from Marcraft prepares technicians to answer the growing demand for qualified cable installers who can understand and implement fiber-optic technologies. The text/lab book covers the theory and hands-on skills needed to prepare students for fiber-optic entry-level certification.

CERTIFICATIONS:

ETA Fiber Optics Installer Certification

Not Just a Simulation! Hands-on Labs Use the Following Equipment:

- Wire Cutters & Strippers
- Fiber Optical Connectors & Plugs
- Fiber Optical Patch Panel
- Fiber Optical Splice Case
- Optical Time Domain Reflectometer
- Fusion Splicer

The Marcraft Fiber Optic Installers Certification Course covers these topics:

- Fiber Tools and Safety Considerations
- Basic Concepts of Fiber Optics
- Optic Fundamentals for Fiber Optics
- Optical Devices
- Fiber Connections
- Fiber Optics Network System
- Documentation and Troubleshooting
- Understanding Blueprints
- **AND MUCH MORE!**

Real World Inspired Hands-on Labs!

INCLUDES:

DC-6000	Fiber Cabling Lab Workstation
DC-670	Fiber Cabling Tool Set
DC-680	Fiber Cabling Consumable Supplies Set
	Instructor's Guide with PowerPoint Presentation Media (1 Per Classroom)

ACCESSORIES:

DC-600WCD	Fiber Cabling Text/Lab Book
DC-670	Fiber Cabling Tool Set
DC-680	Fiber Cabling Consumable Supplies Set
DC-690	Optical Time-Domain Reflectometer (OTDR)
DC-695	Fusion Splicer

35

COMMERCIAL LOW-VOLTAGE WIRING CERTIFICATION PROGRAM
DC-200

The Complete Data Cabling Installers Certification, from the Electronic Technician Association (ETA), provides the IT industry with a vendor-neutral introduction for skilled personnel installing low voltage cabling.

Marcraft provides students with the knowledge and skills required to pass the ETA Data Cabling Installer Certification (DCIC) exam and to become a certified cable installer. The DCIC is nationally recognized and is the hiring criterion used by major communication companies.

CERTIFICATIONS:

ETA Data Cabling Installer Certification

Not Just a Simulation! Hands-on Labs Use the Following Equipment:
- Fish Tape
- Multimeters
- 110-Type & 66-Type Connection Blocks
- Punch-down Tools
- Cable Strippers & Crimpers
- Ethernet Plugs & Jacks
- Cable Testers

The Marcraft Commercial Low-Voltage Wiring Course covers these topics:
- Basic Standards and Practices
- Facilities Issues
- Cable Ratings and Performance
- Cable Installation and Management
- Testing And Troubleshooting
- Industry Standards
- Pulling Cable
- The Telephone System
- Understanding Blueprints
- **AND MUCH MORE!**

Real World Inspired Hands-on Labs!

INCLUDES:

DC-200	Structured Low Voltage Wiring Lab Workstation
DC-210BAS	1 Set, Data Cabling Durable Supplies
DC-220	Set of Data Cabling Tools
	Instructor's Guide with PowerPoint Presentation Media (1 Per Classroom)
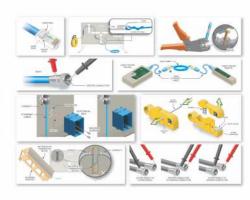
ACCESSORIES:

DC-207WCD	Commercial Low Voltage Wiring Text & Lab Guide
DC-210BAS	Set of Data Cabling Durable Supplies
DC-220	Set of Data Cabling Tools
DC-230	Set of Data Cabling Consumable Supplies

SECURITY & SURVEILLANCE CERTIFICATION PROGRAM
SS-2000

Alarm security technicians protect homes and businesses by installing, testing, and servicing security and surveillance systems. This type of job requires good knowledge of electrical principles. Marcraft provides a practical way to practice these skills with this certification course.

CERTIFICATIONS:

ETA Certified Alarm Security Technician (CAST)

Not Just a Simulation! Hands-on Labs Use the Following Equipment:

- Security Controllers
- Motion and Magnetic Switch Sensors
- Magnetic Door Locks
- Proximity Card Readers
- Push-to-Open Buttons
- Smoke Detectors and Fire Alarms
- Sirens & Strobes
- Security Controller Network Interfaces
- Relays
- Security Cameras
- Network DVRs
- Security Controller Software

The Marcraft Security & Surveillance Certification Course covers these topics:

- History & Evolution of Electronic Alarm Systems
- Basic Annunciation Configurations
- Alarm Electronic Systems
- Control Stations and Certificate Services
- Testing of Electronic Alarm System Circuits
- Creating and Development of First Central Station
- EMI and RFI Electrical Interference on Circuits
- Sensors and Input Devices
- Control Panels
- Keypad and Remote Programming
- Glass Protection, Motion and Shock Sensing
- Power Supplies and Power Backup
- Touch Screen, Computers and Telephone Input
- Fire Alarms Basics and Fundamentals
- Residential and Commercial Installations
- Wireless and Electrical Monitoring Supervision
- Wired and Wireless Alarm Systems
- Fire, Heat and Smoke Detection Devices
- Video Surveillance and Recording
- Internet Access to Security Systems
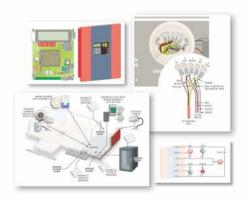- Security Cameras
- Network Digital Video Recorders
- **AND MUCH MORE!**

Real World Inspired Hands-on Labs!

INCLUDES:

SS-2000	Security System Installer Panel
	Instructor's Guide with PowerPoint Presentation Media (1 Per Classroom)

ACCESSORIES:

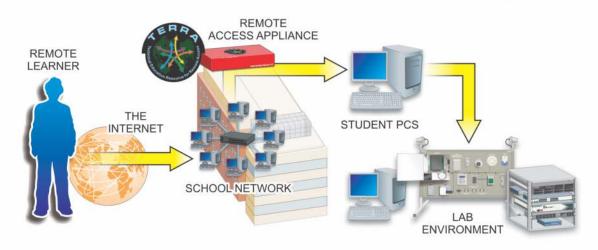|	
SS-200WCD	Security System Installer Theory & Lab Guide
SS-210BAS	Security System Installer Durable Supplies Set
SS-220	Security System Installer Tool Kit
SS-230	Security System Installer Consumable Supplies Set

37

TERRA
RA-TERRA

Is remote learning impacting hands-on lab access? Connect our TERRA Remote Access Appliance to your lab network to add hands-on activities to your remote learning environment. Each TERRA unit is custom programmed for your organization to work with your Marcraft training courses.

INCLUDES:

| RA-TERRA | TERRA Remote Access Appliance, including Custom Programming & Documentation |

Remote, Hybrid, or In-Class, Our Hands-On Labs Can Work For You!

REMOTE LEARNER

THE INTERNET

REMOTE ACCESS APPLIANCE

SCHOOL NETWORK

STUDENT PCS

LAB ENVIRONMENT

All training units are built right here in our plant in Western New York State.

Richland, Washington

Ellicottville, New York

Marcraft is now part of the iConnect Training team.