



IEEE Communications Society
Wireless Communication Engineering Technologies



Certification & Training for the Wireless Communications Professional

December 2012



WCET Certification - Why

Created to help:

- Address the continuing education needs of wireless communications professionals
- Meet industry's need for qualified wireless professionals

*“WCP certification greatly helps to communicate my capabilities to others; ... **preparing for and maintaining the certification has been great for my continuing education and broadening my background.** The certification procedure also helps me to understand my strengths and weaknesses in the field.”*

- Chris Barroso

IEEE Wireless Communications Professional®
San Diego, CA, USA

WCET Certification - Intent

“I manage a team of engineers ... I would likely use questions such as those posed in the WCET exam to filter out candidates ... I would make hiring decisions based, at least in part, on WCET results.”

-Subramanian Vasudevan

IEEE Wireless Communications Professional ®

Whippany, NJ, USA

- **IEEE WCET Certification effectively measures skills and knowledge used in contemporary practice**
- **Successful candidates earn the credential “Wireless Communication Professional” (WCP)**

Who Qualifies?

*“Wireless technology and practice requires that almost any task performed involves intuition, knowledge, and context in a broad range of areas even when the task is very specific. **The WCET exam provides professional recognition for those individuals who have the necessary breadth** and can be counted on as effective practitioners in the engineering, deployment, or operation of wireless systems.”*

- Adam Drobot

WCET Industry Advisory Board Member
formerly Telcordia

- **Primarily designed for wireless communication professionals who:**
 - Hold a bachelor’s degree from an accredited institution
 - Have at least three years of professional wireless engineering experience
- **Can help those working in other areas switch to the wireless field**
- **Candidates self-select; no one is excluded from taking this exam**

WCPs: Why I Got Certified

- To help increase and demonstrate my knowledge of wireless communications
- To gain an industry-acknowledged credential to help advance my career
- To demonstrate my commitment to the wireless industry and the profession
- To understand my strengths in the field and broaden my background

“Congratulations and well done on gaining this certification. Now that you have gained this qualification it is time to consider introducing the WCET certification program to the team for others to aspire to do the same and add this credential to their professional development plans.”

-Ian Rose

BT Design, UK

Congratulatory note to a member of his staff upon passing the exam

How is WCET Different?

- Vendor-neutral
- Trans-national
- WCET focus is explicitly on the knowledge and on-the-job experience that a practicing wireless communications professional needs to be successful globally in this industry

Where are the WCPs?



And the list keeps growing!

- Australia
- Argentina
- Brazil
- Canada
- China
- Colombia
- Denmark
- Ecuador
- Egypt
- Hong Kong
- India
- Japan
- Turkey
- Korea
- Macao
- Malaysia
- Mexico
- Nigeria
- Saudi Arabia
- Singapore
- Spain
- United Kingdom
- United States
- Venezuela

Top 5 Reasons for Organizations to Support WCET

"Started a consulting practice in wireless communications, specializing in point to point connections ... I felt that this certification would enhance my qualifications with new clients."

- Tom Lavrisa, IEEE WCP
Kanata, ON, Canada

- 1. WCP credential holders have demonstrated a thorough knowledge of wireless engineering technology concepts.**
- 2. WCP credential holders have shown their skill in applying this knowledge to practical problems.**
- 3. WCP credential holders have successfully responded to a significant challenge in earning the credential.**

Top 5 Reasons for Organizations to Support WCET (2)

“WCET certification distinguishes me as a wireless expert. For customers, the certification helps provide a level of trust that they are being advised by a certified wireless engineer.”

- Jeff Smith, IEEE WCP
Cisco Systems, Inc.
Englewood, CO, USA

4. Investing in employees aids in retaining them.
5. Supporting the WCP credential makes a powerful statement to customers about the caliber of your people and your commitment to best practices.

Companies Who Employ IEEE WCPs Worldwide

- Alcatel-Lucent
- BAE Systems
- Bell
- Boeing
- British Telecom
- Cincinnati Bell
- KDDI
- Motorola
- NCR
- NTT Docomo
- Rogers Communications Inc.
- SAIC (Science Applications International Corp.)
- Saudi Aramco
- TASC
- Telefonica
- Texas Instruments
- US Cellular
- US Army
- Verizon
- WIPRO

Subject Areas Covered

The exam's 150 questions measure knowledge and skill in seven wireless communications areas:

- **RF Engineering, Propagation, and Antennas** (19-23%)
- **Wireless Access Technologies** (19-23%)
- **Network and Service Architecture** (19-23%)
- **Network Management and Security** (11-15%)
- **Facilities Infrastructure** (6-8%)
- **Agreements, Standards, Policies, and Regulations** (6-8%)
- **Fundamental Knowledge** (8-12%)

Industry Advisory Board: Keeping the Exam Current

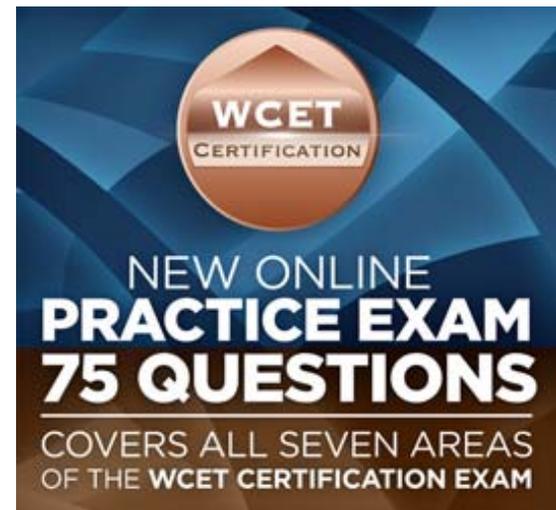
- M. Ahsan Baig, CITY OF OAKLAND
- Asok Chatterjee, ERICSSON
- Wu Chou – HUAWEI
- Fadel F. Digham, NATIONAL TELECOM REGULATORY AUTHORITY
- Javan Erfanian, BELL MOBILITY, CANADA
- Gerry Flynn, VERIZON WIRELESS
- Robert Fonow, TRIVON AG
- Ashley Hunter, TELSTRA
- Hyung Hee Lee, SK TELEKON
- Francis E. O'Brien, Jr., ALCATEL-LUCENT
- Arun K. Pande, TATA CONSULTING SERVICES
- Don Winter, THE BOEING COMPANY
- Norikazu Yamasaki, KIDDI CORPORATION
- Byung K. Yi, LG ELECTRONICS

Exam Specifics

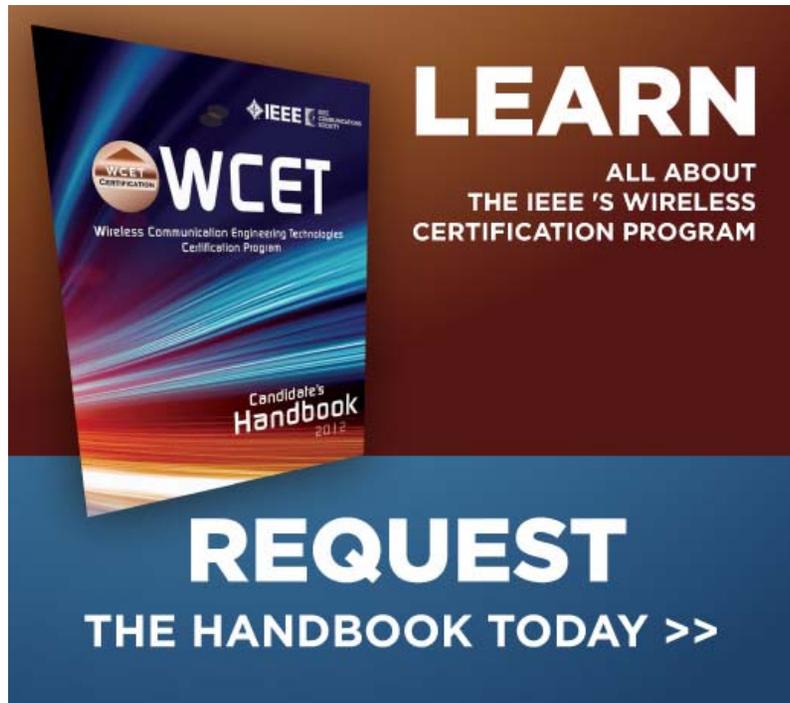
- Examination Details
 - Four-hour, 150-question multiple-choice exam
 - Given at secure computer-based testing centers
 - Over 500 testing sites in 75 countries worldwide
- Examination Fees
 - US\$450 for IEEE and ComSoc members
 - US\$500 for non-members
 - Includes application fee, seat fee, score report
- Set the date of your exam during the exam window at a testing center local to you
- Competitive pass rate; this is a difficult exam – preparation is required and necessary for success
- Earning the WCP carries significant weight in the industry

Resources

- **Online Practice Exam**
 - US\$50.00
 - Understand your areas of strength and where you could use some extra work
- **ComSoc Training**
 - www.comsoc.org/training
 - Get up to speed quickly while learning from experts in the field
 - Member discounts / Group pricing
 - Offer a combination Exam Seat + 5 day Course for one low price / one invoice



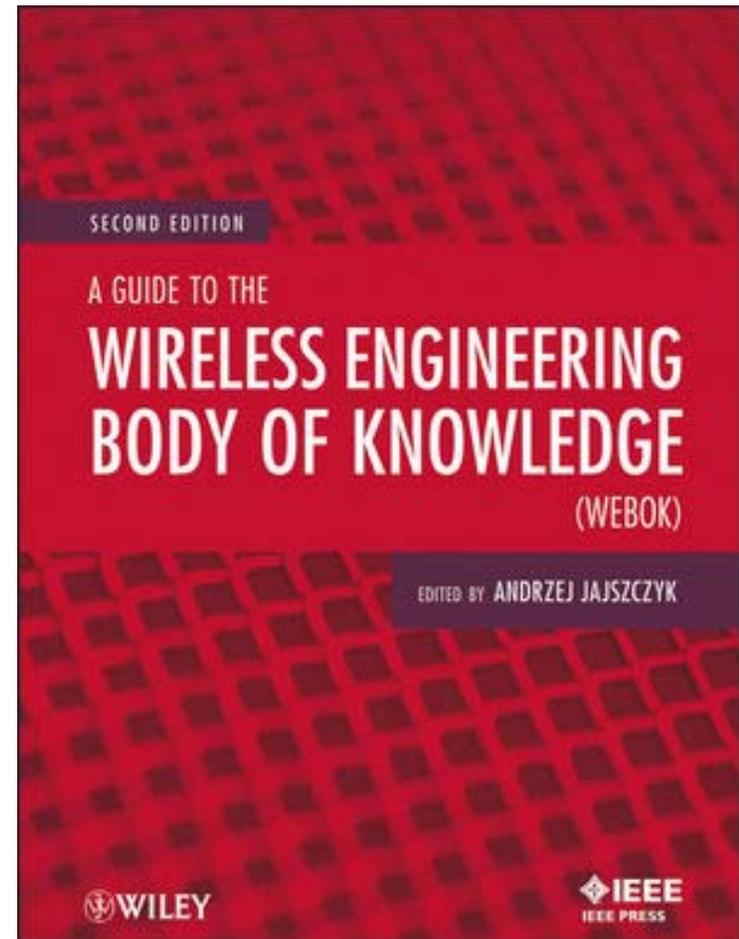
Candidate's Handbook



- **FREE on request**
 - To help you determine if getting IEEE WCET Certified is right for you
- **Provides insight on:**
 - Subject areas covered
 - Application procedures
 - Sample references
 - Sample questions
 - Contact information
- **Electronic & print versions available**

WEBOK

- *Second Edition released October 2012; published by Wiley*
- *Covers seven key areas in wireless with detailed references at the end of each chapter*
- *1st edition sold over 2,000 copies*



FREE Resources



Over 6,500 opt-in subscribers and growing!

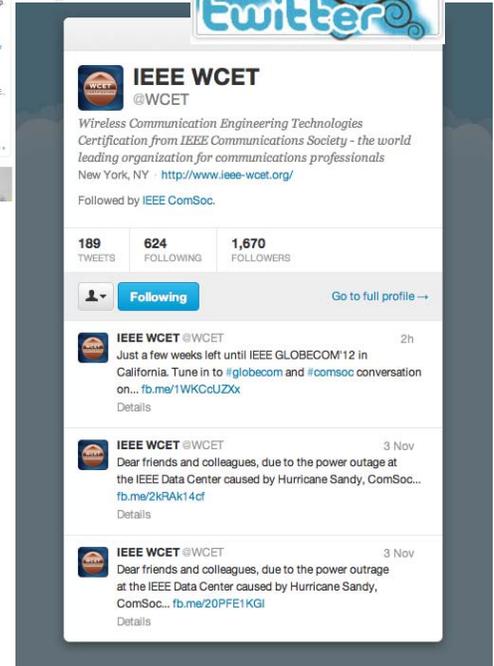
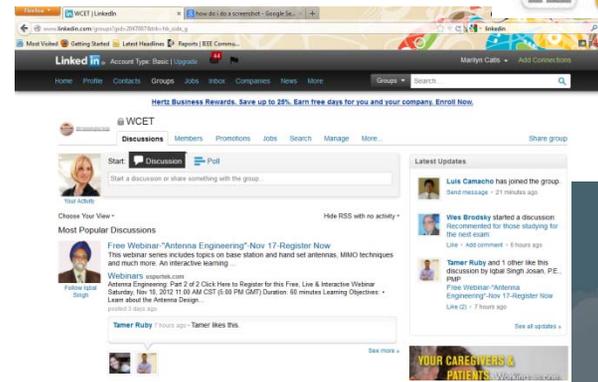
- Bi-monthly news service designed to help you manage your career by bringing you up-to-date information on the wireless industry
- Free ComSoc Webinars
- Visit www.ieee-wcet.org to access:
 - Glossary of common wireless communication terms
 - List of sample references
 - Sample test questions
 - List of known training providers



Social Networking

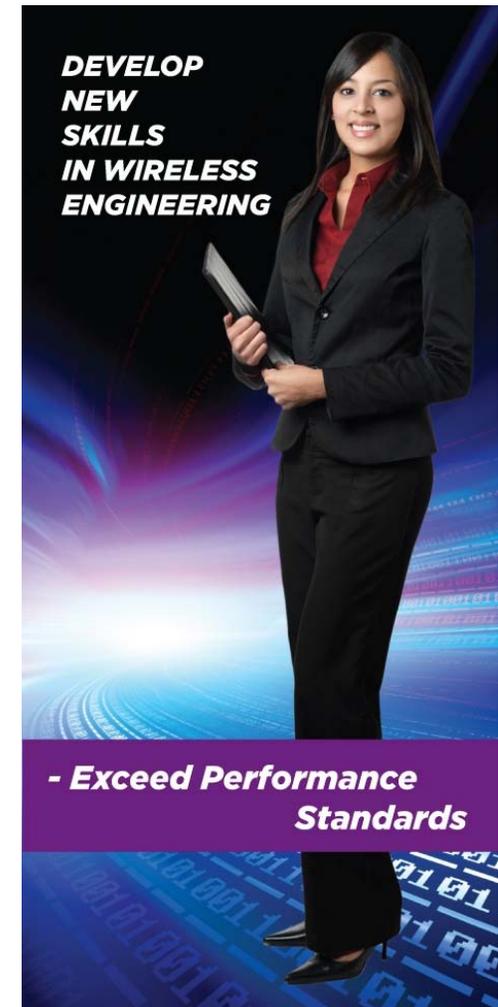


- 2 Groups on LinkedIn
 - Over 1,100 on WCET
 - Over 80 in private study group
- Twitter
 - Over 1670 followers
- facebook
 - 2,237 unique likes



ComSoc Training

- 2010 – Started Program
 - 1st course taught: 5 day course online
 - 2 instructors helped make it happen
 - World wide audience
- 2011 – 13 courses
 - 420+ participants
 - Vetted and added instructors
- 2012 – 25 courses projected
 - 660+ participants
 - Added 4 new courses to the schedule
 - 10 instructors



Employees at Companies Like ...

- Alcatel-Lucent
- AT&T
- Becker Mining Wholesale
- Bell Canada
- The Boeing Company
- Booz Allen Hamilton
- Canadian Department of Defense
- Cincinnati Bell
- Cisco Systems
- Comcel-Colombia
- DELCORA
- Digitech Communications
- DOCOMO Innovations, Inc.
- General Dynamics
- Harris Corporation
- Hydro One
- Intel Labs
- L-3 Communications
- Lawrence Livermore National Laboratory
- MIT Lincoln Laboratory
- MITRE
- Nokia, Inc.
- NYSTEC
- Olympus Communication Technology of America
- QU Wireless Innovations Center
- Savannah National River Labs
- SENTEL Corporation
- Siemens Corporation
- Sound Transit
- SPARTA, Inc.
- Stanford University
- Tahoe RF Semiconductor
- US Army
- US Department of Defense
- US Department of Energy
- US House of Representatives
- Verizon
- Weidmuller North America
- Western Digital
- Zenith

Take ComSoc Training Courses

... and What They've Said About It

- The instructor “***was very knowledgeable*** in the material and knew quite a few anecdotes that were valuable to the students.”
– Frederick Demers, Government of Canada
- “***A fulfilling and well organized educational experience.***”
– Waldon Russell
- “Keeping the ***cost low and the classes short*** makes it easier to attend more often and justify to managers.”
– Steve Kaleta, PE
- “With all the history, technologies, and claims, ***it’s good to put a complex subject in perspective.***”
– Joe L., Canyon Applied Technologies, LLC
- “What impressed me most about the course was the ***amount of material – all current – that was distilled into a coherent one-day course.***”
– Andris Aplocins

ComSoc Training Instructors



Alan Bensky



Daniel Wong



Javan Erfanian



Lee Vishloff



Brent Forman



Jonathan Levine



Randy Carlson

New Courses in 2012

- Introduction to Professional Wireless Communications
- Self Organizing Networks: The Next Must Within LTE / Multi-Technology Roadmap
- Overview of Machine-to-Machine (M2M) for Engineers and Managers
- VoLTE: Convergence of IMS-based Voice and LTE
 - All four new courses are one day, online
 - 9:00am – 4:30pm EDT
 - \$300 non-member; \$250 IEEE/ComSoc member
 - Course participants get a print copy of the instructor's PowerPoint slides and access to the streaming video recording of the course for seven days after the live course

2013 Exam Dates



START APPLICATION →

(You will be redirected to the secure application site of **Professional Examination Services**)

- **Spring**
 - Application Deadline: 22 March
 - Testing Window: 7 April – 4 May
- **Fall**
 - Application Deadline: 13 September
 - Testing Window: 29 September – 2 November

Chapter Participation Opportunities

- ComSoc is interested in creating additional distribution streams
 - ComSoc Training
- Call for Question Writers
 - WCET Exam

Opportunities: Training

- In-Person Courses
 - ComSoc provides Instructor, Travel, Registration & Course Materials
 - Chapter provides venue, AV, event site coordination
 - Revenue sharing
- Online Courses
 - Group rate discounts for more than 5

Training continued ...

- Training & Certification Package Deal
 - Discounted package rate for groups
 - One discounted price for a seat in both the 5 day course and for the WCET exam
 - Valid for a specific testing window
 - Spring 2013
 - Fall 2013

WCET Exam: Call for Question Writers

- Tasks for Question Writers
 - Develop practice-related, multiple choice questions for use on the WCET exam
 - Develop approximately 20 questions
 - Based on the list of topics provided
 - In accordance to the explicit instructions about how to write sound test questions

Question Writing continued ...

- Volunteers interested can contact us to get involved or send an email to **cert@comsoc.org**
- Training on question writing is available
 - Most work is done through conference calls
 - Face-to-Face meetings may happen yearly