ACTP
ADVANCED CYBER TRAINING PROGRAM

ANDROID
Programming

📅 **5-Day course**

COURSE DESCRIPTION

The **Android Programming** course is a unique course offering students the ability to explore the Android operating system. This lab-driven class exposes students to the entire OS API, covering everything from development of Android applications using the SDK and Android Studio to how these APIs map to native libraries, the Linux kernel, and Android-specific kernel components. There is also a heavy emphasis on security at each level covered, including features and developments from the latest releases of Android.

Workstations, Android devices, and all required technical documentation will be provided.

Prerequisites: Students should have a bachelor's degree in Computer Science, Computer Engineering, or equivalent experience. Some C and Java programming experience is preferred

GSA

Security
Become certified in Android programming as well as security topics within the Android OS.

Application Development
Provides hands-on experience with both application and native app development.

Cyber Security Research
A premier offering of ACTP aimed at cyber security researchers and programmers.

AGENDA COURSE CONTENT

DAY 1

- Android architecture
- AOSP
- Android Debugging Bridge
- Android device modes
- Android Studio
- Android applications
- Rooting and flashing a phone

DAY 2

- Android Broadcast Receivers
- Android Permissions
- Android Activities
- Android Services: development, types, AIDL interface language
- Intents and Messages: types, security

DAY 3

- Android Content Providers
- Binder driver – functionality, implementation
- Android sensors – use, types
- Android Frameworks
- Android JNI
- Native Code and Native Development Kit (NDK) introduction

DAY 4

- Android Native Sensors
- Cross-compilation process
- Android Native Service development
- Android Native to Java Communication Models
- Android HAL

DAY 5

- In-depth Practical

  Exam and certification/completion

* The full course syllabus is available upon request

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