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| **Course Title/ Code** | **Advance Android Development(CSH312B) T & P** |
| **Course Type:** | Elective |
| **Course Nature:** | **Hard** |
| **L-T-P-O Structure** | (3-0-2-0) |
| **Objectives** | Students would be able To develop advance android application. |

Students will be able to implement and learn:

* Will be able to create Fragment and App widgets
* Will be able to handle sensor of Mobile, and handle sensor data in app
* Will be able to create mobile app with language selection as localization
* Will be able to handle mobile location (GPS), Places, Mapping
* Will be able to create Canvas and handle animation and media files

# Section-A

**Fragment:** Creating a fragment and its layout, adding a fragment to an activity (static, dynamic), Fragment lifecycle, Communication between a Fragment and an Activity. **App widgets:** creating widget to an app, updating the widget provider-info. **Sensors:** Discovering sensors and sensor capabilities, sensor configuration. Device orientation and rotation. Motion and position sensor.

# Section-B

**Performance:** Good performance, performance test, frame rate, minimize overdraw, Garbage collection, Memory leak and memory churn, memory profiler tool, Network and battery best practices, Optimizing images and serializing data. **Localization:** Understanding language and locale settings, using the Translation Editor, Formatting date and time, numbers, currencies.

#### Section-C

**Location:** Requesting location permissions and last known location, Geocoding, creating a LocationRequest object, working with the user’s location settings. **Places:** Using the place-picker UI, Getting the device’s current place, using the place-autocomplete service. **Mapping:** GoogleMap objects, Map types, Configuring the initial map state, Lite mode, Map style.

#### Section-D

**Custom views:** Creating and drawing the custom view, using custom view in a layout, using property accessros and modifiers. **Canvas:** Canvas object, creating and drawing canvas object, drawing shapes and text, Transformations, Clipping, saving and restoring a canvas. **Animation:** View animation, Property animation, Drawable animation, Physics-based animation.

**LIST OF EXPERIMENTS:**

1. Lab: Creating a Fragment with a UI and communication with a fragment
2. Lab: Building app widgets
3. Lab: Working with sensor data
4. Lab: Working with sensor-based orientation
5. Lab: Using the profile GPU Rendering tool
6. Lab: Using the Debug GPU Overdraw and Layout Inspector tools
7. Lab: Using the Systrace and dumpsys tools, memory profiler tool
8. Lab: Using resources for languages
9. Lab: Using the device location
10. Lab: Using the places API
11. Lab: Adding a Google Map to your app
12. Lab: Creating a custom view from scratch and View subclass
13. Lab: Creating and drawing a canvas object
14. Lab: Creating property animations

**Text Books:**

# Advanced Android Application Development by[Joseph Annuzzi (Jr.)](https://www.google.co.in/search?tbo=p&tbm=bks&q=inauthor:%22Joseph+Annuzzi+(Jr.)%22), [Lauren Darcey](https://www.google.co.in/search?tbo=p&tbm=bks&q=inauthor:%22Lauren+Darcey%22), [Shane Conder](https://www.google.co.in/search?tbo=p&tbm=bks&q=inauthor:%22Shane+Conder%22), Addison-Wesley.

1. <https://developers.google.com/training/courses/android-advanced>
2. Android Developer Advance – Concepts by Developed by Google Developer Training

**Reference Book:**

# Professional Android 2 Application Development by Reto Meier, Wiley.