HTML5 Application Development

1. **Application Lifecycle Management**
   1.1 Describe the application lifecycle management stages
   - Plan, design, develop, test, deploy, and maintain
   1.2 Debug and test web apps
   - Input validation errors, runtime errors, breakpoints

2. **Graphics and Animation**
   2.1 Use the canvas element to create graphics and animations
   - shape, color, line, translate/move, rotate, scale, interactivity
   2.2 Use the svg element to create and display graphics
   - Advantages, inline vs. referenced XML, shapes, color, SVG filter effects
   2.3 Transform, style, and enhance text and graphics
   - Graphics effects (rounded corners, shadows, transparency, background gradients, typography, and Web Open Font Format), 2-D and 3-D transformations (translate, scale, rotate, skew, and 3-D perspective transitions and animations), keyframes
   2.4 Apply CSS filters to images
   - grayscale, blur, sepia, opacity, drop-shadow, saturate

3. **Forms**
   3.1 Construct and analyze markup that uses form elements
   - datalist, fieldset, meter, legend, output
   3.2 Configure input validation
   - Validation attributes, pattern attribute for regular expressions, correct data type, length, required value

4. **Layouts**
   4.1 Manage content layout, positioning, and flow by using CSS
   - Content flow (inline vs. block flow), positioning of individual elements (float vs. absolute positioning), content overflow (scrolling, visible, and hidden), basic CSS styling
   4.2 Construct layouts by using responsive design
   - grid view, background-size, images, picture, viewport, responsive width, media queries
   4.3 Construct flexible responsive layouts by using CSS flexbox
   - flex container (flex-direction, flex-flow, flex-wrap), flex items (flex-basis, flex-grow, flex-shrink, order, flex)
   4.4 Construct grid-based layouts by using CSS grid
   - container, items, templates, gap
5. **JavaScript Coding**

5.1 **Create and use custom classes**
- Instantiation, properties, methods, inheritance

5.2 **Perform data access by using JavaScript**
- Send and receive data, transmit and parse complex objects, load and save files, XML, JSON

5.3 **Construct code that responds to events by using event listeners and handlers**
- Gesture events, handling multiple events, Event object, bubbling vs. cascading

5.4 **Construct code that uses JavaScript APIs**
- Google Charts, jQuery, Geolocation

5.5 **Manage the state of an application**
- Session state vs. app state, where to store state (local vs. session storage)