**SAST (Static Application Security Testing) → analyzes code before running:**

* Scans source code or compiled binaries, looks for vulnerabilities like SQL Injection, XSS, insecure API usage.
* Runs before deploy (so it fits exactly in your dev CI pipeline).

**Tooling Options:**

* **SonarQube (Developer/Enterprise edition) – can run fully offline, integrates with Azure DevOps.**
* **Fortify SCA (Micro Focus) – enterprise-grade, offline capable.**
* **Checkmarx (on-prem edition) – common in enterprises.**
* **Semgrep (self-hosted, open-source) – lightweight, runs via CLI.**
* **CodeQL (GitHub’s SAST) – works, but for fully offline use you need to pre-download packs.**

**DevOps pipeline:**

1. **Dev (CI) Stage:**
   * **✅ Run SAST – Dev team (SonarQube, Semgrep, Fortify)**
   * **✅ Run SCA – Dev team (dependency scans)**
2. **Test (CD) Stage**
   * **✅ Deploy app to staging/test env**
   * **✅ Run Dynamic Application Security Testing (DAST) – Security team**
3. **Prod**
   * **✅ Optional pre-prod scan – Security team**
   * **✅ Runtime monitoring & WAF - – Security team**

**Courses and Training:**

* [**Certified Secure Software Lifecycle Professional**](https://www.google.com/search?q=Certified+Secure+Software+Lifecycle+Professional+%28CSSLP%29&oq=CSSLP&gs_lcrp=EgZjaHJvbWUqBwgBEAAYgAQyBwgAEAAYgAQyBwgBEAAYgAQyBwgCEAAYgAQyBwgDEAAYgAQyBwgEEC4YgAQyBwgFEAAYgAQyBwgGEAAYgAQyBwgHEAAYgAQyBwgIEAAYgAQyBwgJEAAYgATSAQgxOTQyajBqN6gCALACAA&sourceid=chrome&ie=UTF-8&mstk=AUtExfDlAKsoc14pmYBonYyMsV_hNySolknye3RsyRwM0_h8eP-Z7faDInott9djQqkJRzKm2NL4LItLD5duE3n2ym6czrg1Aee1FzovnE12osWdFkOh5h5BRftGtzQPTf9aZ1p_HBEdM3mtxO2071lxHRicdxvYeAMT93oVUVzxY-R2zGw&csui=3&ved=2ahUKEwiHqeq1_NWPAxVGU6QEHRn6GRoQgK4QegQIARAD) **CSSLP**
* **Secure software development - KAUST Academy**
* **Secure Coding in ASP.NET Core (OWASP-based)**
* **OWASP API Security Top 10 & Beyond**
* **NobleProg — Secure Coding Training**
* **Prog360 — Secure Coding Training and Certification**