INSTITUTE OF AERONAUTICAL ENGINEERING
(AUTONOMOUS)
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Traits of Great Programmers

Effective Assessment for the Next Generation of Coders

Great programmers don't just write code; they craft solutions with clarity, curiosity, and care.
Great programmers are more than just technically proficient—they are curious problem-solvers, clear thinkers, and lifelong learners. They demonstrate logical reasoning, creativity, attention to detail, and strong collaboration and communication skills. As we shape the next generation of coders, it's essential that assessments move beyond traditional testing to recognize and nurture these deeper traits. Truly effective evaluations should not only measure coding accuracy but also inspire innovation, resilience, and adaptability. By aligning assessments with real-world skills, we empower learners to grow into thoughtful, impactful developers.

Methodology for Audit of
Next Generation of Coders
Evaluation Period – Once in a Semester (Odd / Even)

S No	Parameters	Marks	Weightage
1	Programming Challenges and Digital Portfolios	20	0.20
2	Essential Technical Skills for Programmers	30	0.30
3	Industry Driven Hackathons	10	0.10
4	Technical Skill Proficiency	20	0.20
5	Professional Certifications	10	0.10
6	Technical Projects	10	0.10

S No.	Parameters		Marks
1	**Programming Challenges and Digital Portfolios (PCDP)**	**Audit Weight: 0.20**	**20**
	A. Number of problems solved in online coding platforms: 10 marks (Profile links in minimum 3 platforms) B. Number of streaks in coding platforms: 05 marks C. Digital portfolios (minimum 3 links) : 05 marks		
2	**Essential Technical Skills for Programmers (ETSP)**	**Audit Weight: 0.30**	**30**
	A. Essential programming skills (Java / Python / PHP): 05 marks B. Web developer skills (HTML / CSS / JavaScript / Node.js / Django / ExpressJS): 05 marks C. Mobile application developer (Java / Kotlin / Flutter / React Native): 05 marks D. Database (MySQL / MongoDB / NoSQL): 05 marks E. Game developer (C# / Python / Unity / Unreal): 05 marks F. Machine Learning / Data Scientist / Cyber security: 05 marks		
3	**Industry Driven Hackathons (IDH)**	**Audit Weight: 0.10**	**10**
	A. Mentoring students in industry driven hackathons: 10 marks (TCS HackQuest, Lumen Quest, EY Techathon, Virtusa Jatayu Ideathon, Cognizant Bluebolt, Accenture Hack Diva, HackWithInfy, Quest Global Ingenium, L&T Techgium, Smart India Hackathon (SIH), Tata Technologies InnoVent)		
4	**Technical Skill Proficiency (TSP)**	**Audit Weight: 0.20**	**20**
	A. Expert (Java / SQL / Python / JFS / C++ / C# / React / JavaScript / Git): 10 marks B. Advanced (Go / Rust / Node.js / Android / iOS / Offensive security): 05 marks C. Familiar (Ruby / Swift / Object-oriented design): 05 marks		
5	**Professional Certifications (PC)**	**Audit Weight: 0.10**	**10**
	A. Professional Certifications (minimum 5 certificates): 10 marks (NPTEL / Coursera / Infosys Springboard / Google Cloud Skills Boost / ATAL / Wipro TalentNext / Oracle / edX / LinkedIn learning / AWS Skill Builder / IBM SkillsBuild / Microsoft Learn / Geeksforgeeks / Hacker rank)		
6	**Technical Projects (TP)**	**Audit Weightage: 0.10**	**10**
	A. Mentoring students in High impact practices (HIPs) B. Mentoring students in Technology innovation and product support (TIPS) C. Mentoring students in Vertically integrated projects (VIPs) D. Mentoring students in Projects in community services (PICS) E. Mentoring students in Capstone projects Note: minimum any 1 project listed above		

* Attach proofs