TECH4dEV

Women Techsters Fellowship

Training Delivery

Methodology

women
techsters

The Women Techsters Fellowship is a comprehensive one-year training program meticulously designed to cater specifically to women who aspire to make a mark in the world of technology. The program entails six months of rigorous training followed by a rewarding six-month internship, equipping women with the essential skills and knowledge required to launch fulfilling tech careers or establish their own tech ventures.

This program is tailored for women who are enthusiastic about commencing their professional journeys in technology and securing entry-level positions within the industry. To ensure the highest quality of training delivery and maximize outcomes, the program is implemented across eight distinct learning tracks, each encompassing standardized and carefully crafted learning curriculums.

Throughout the six-month training period, experienced instructors will guide and mentor the participants, providing them with valuable insights and industry best practices. We recognize that employing the most effective training delivery methodology is crucial in ensuring that each participant attains optimal results and acquires the competencies necessary to thrive in the tech sector.

It is important to note that the six-month internship opportunity is exclusively available to outstanding students who have successfully completed all the requirements of the fellowship program. This internship serves as a valuable practical experience, further enhancing the participants' skills and providing them with hands-on exposure to real-world tech environments.

By embracing this robust training methodology, the Women Techsters Fellowship program strives to empower women and foster an inclusive environment where they can excel and contribute meaningfully to the technology industry.

Features of Training Delivery:
- Mode of training delivery: Instructor-Led (Virtual)
- Duration: 4 hours/day
- Standard Class Size: ≤100
- Instructor/Student Ratio: 1:100
- Learning Tracks:
  - 3D/MR
  - Blockchain Development
  - Cyber Security
  - Data Science and Engineering
  - Mobile Application Development
  - Product Design
  - Product Management
  - Software Development (Frontend/Backend)

Tech4Dev adopts **Kirk Patrick's Model of evaluation** both during and at the end of a program. The method gives predicted feedback on the following for the beneficiaries:
  - **Reaction:** How do students react to the training? If their reaction is positive, they're more likely to have positive learning outcomes. A negative reaction doesn't preclude learning, but it makes learning less likely.

- **Learning:** How much did participants learn? Did they retain the information over time? These questions don't seem overly complicated. But getting reliable objective measures can be difficult. Knowledge acquisition, for example, can be measured with a simple multiple-choice quiz. The ability to apply that knowledge, however, is more difficult to measure and may require a more in-depth assessment.
- **Behaviour**: Are the participants applying what they learned to their jobs? This is possibly the ultimate test of the effectiveness of instruction. This can be achieved by demo projects and capstone projects for each learning track.
- **Results:** Did the training achieve the desired impact, are more people now able to get tech job roles because they were a part of Tech4Dev's training programs? Conclusions can only be drawn based on the available data.
  You can learn more about Kirk Patrick's model of Evaluation [here.](#)

With this anticipated feedback in mind, the following activities will serve as the basis for knowledge delivery and validation over the course of the 6-month training.

- **Engaging Lecture Delivery**: The delivery of lectures is a component of the daily activities in class (Monday through Thursday and Soft Skills training will be held on Fridays), **with breaks of 10 to 15 minutes scheduled after every 45 minutes.** This will be a portion of the typical 4-hour lesson. The participants are expected to arrive at least five minutes early for classes. At various points during the lesson, it is anticipated that the instructors will take attendance to verify the student's attendance. It is expected that the learning sessions will be interactive to promote participation and help students develop their cognitive processes for their chosen learning path.
  - Review of previous lessons – 15 mins
  - Introduction to the day's lesson – 30 mins
  - Engaging content (Video, website review, etc.) - 15 Mins
  - Deep dive into the day's lesson – 45 mins
  - Break - 15 Mins
  - Assessment Poll – Using the poll tool on the Microsoft Teams app, facilitators are to use the poll tool to conduct informative assessments in class.
  - Deep dive continued (Practical) – 45 mins
  - Class activities (students' presentations and class quizzes).
- **Weekly Assessments:** To determine how well beneficiaries understand the topics being taught, assessments will be administered weekly. The assessment quiz would be developed by the instructors and reviewed by the instructional design team.
- **Monthly Score Board:** The monthly scoreboard is a read-only sheet that will be shared every month with the beneficiaries. This sheet will contain their assessment, attendance, and mini-project scores as of the month that the sheet is being shared. This will help the students to keep track of their performance and capture their complaints early before the program ends.
- **Student Study Groups:** This is an intermediate and advanced level program component designed to foster communal growth. It is a model that is intended to leave no one behind. Members of a learning track are divided into study groups, and they work on monthly mini-projects, group case studies, and study sessions together to help improve the overall learning experience for program participants.
- **Weekly Office Hours – Study Group meetings**: The Weekly Office Hours provide an opportunity for study groups to meet with their facilitator(s) and seek clarification on any concerns or questions arising from their study group meetings. To secure a slot, study groups

should make a booking before the Close of Business on Wednesday of the same week. Please note that availability will be on a first-come, first-serve basis for each week.

This arrangement ensures that students have dedicated time to address their study group-related concerns and receive the necessary support from their facilitators.

- o Time: Fridays, 2:00 PM to 4:00 PM
- o Duration: 30 minutes per study group
- o Booking Deadline: Close of Business on Wednesday of the same week
- o Booking Basis: First come, first serve for each week
- **Monthly Mini-Projects:** Projects will be worked on by students put in groups for each learning track every month. A project topic is expected to be introduced on the first week of each month to each learning track to serve as the goal for the learners. The mini-project topics will be agreed upon by both the students and the instructor to improve participation.
  - o Monthly Mini Project Demo: In the first week of every month there will be a demo/presentation as the beneficiaries will be required to present the project that they have worked on virtually and will be judged by an external that will be selected by their facilitator and after which they will be graded.
- **3rd Party Certifications:** Every fellow is expected to have at least 2 certifications at the end of a training program. Below are the recommended certifications to take per learning track and when.

Learning Track	Certifications	At what point in the program do I take it?	Paid or Free?
3D/MR	Basic 3D Modeling using Blender	Months 1 to 2	Free
	BLENDER FROM THE GROUND UP	Months 2 to 3	Free
	Developing AR/VR/MR/XR Apps with WebXR, Unity & Unreal	Month 3	Financial Aid Available
	LinkedIn - Blender Essential Training	Month 1	Free for the first 30 Days.
Blockchain Development	Blockchain Theory 101	Months 1 to 2	Free
	Enterprise Blockchain Fundamentals		
	Pluralsight Blockchain Fundamentals	Months 2 to 3	Free
	Ethereum Development Course - Blockchain at Berkeley		

Cyber Security	[Introduction to Cybersecurity Tools & Cyber Attacks](#) [IBM Cybersecurity Analyst Certification](#) [Cybersecurity Compliance Framework & System Administration](#) [Network Security & Database Vulnerabilities](#) [Penetration Testing, Incident Response and Forensics](#)	Month 1	Financial Aid available
Data Science	[IBM Data Science and AI Certification](#) [IBM Data Analyst Certification](#) [IBM Data Engineering Professional Certificate](#) [IBM Data Warehouse Engineer Professional Certificate](#)	From Month 1 These courses have some similar topics, you may not need to repeat the learnings in those cases.	Financial Aid is available
Mobile App. Dev.	[Meta Android Developer Professional Certificate](#)	From Month 1	First 30 days free, then 49$/month
Product Design	[Google UX Design Certification Course](#) [UX & Web Design Master Course: Strategy, Design, Development](#)	Month 1 Months 1 to 2	Financial Aid is available. $13 for the course and certification (UDEMY)
Product Management	[AWS - Real-World Product Management Specialization Certification](#) [University of Virginia - Digital Product](#)	From Month 1	Financial Aid is available.

| | Management Specialization Certification

University of Alberta - Software Product Management Certification | | |
|---|---|---|---|
| **Software Dev.** | Meta Front-end Development Certification Course

Beginner Full Stack Web Development: HTML, CSS, React & Node | From Month 1

Month 1 | Financial Aid is available.

$13 for the full course and certification |

- **3ʳᵈ Party assessments:** Midway into the training, program beneficiaries will be expected to take skill tests from free third parties learning platforms such as LinkedIn and Pluralsight to validate their skills and to share on their platforms as a way of creating awareness in preparation for job opportunities.
- **Capstone Project**: Cross-functional teams will be set up to work on final projects at the end of the training program. The problem that will be worked on will be in line with the problem statements that we have gathered from all our program partners as well as Business Problems/Development Problems (SDGs). This will also be a part of the cumulative assessments for the training program.
- **Soft skill training:** To ensure beneficiaries are acclimatized with the Tech-work environment, they will be introduced to the different necessary soft skills. This session occurs every Friday throughout the duration of the training program.
  The training will be delivered using the curriculum below:

S/N	Topic	Content
1	**Self-Assessment**	o What is your Motivation o Identifying professional talents/gifts o Discovering and understanding your personality type o Understanding personality flaws o Creating a skills inventory o Setting and tracking goals o Understanding your learning style
2	**Communication**	o How to write emails professionally o Proposal-writing o Listening actively o Presentation and public speaking o Negotiation and persuasion o Managing different communication styles o Managing high-stakes conversations o Conflict resolution o Understanding and interpreting body language o Customer service
3	**Team Work**	o Brainstorming o Collaboration o Team-building strategies o Boosting morale o Establishing trust o Understanding different perspectives o Setting realistic expectations o Assigning roles on a team o Compromise in the workplace
4	**Productivity**	o Creating a productive workstation o Office ergonomics o Personal organization tools o Managing documents o Batching professional tasks o Setting deadlines o Planning for absence o Practicing discipline o Correcting poor work habits o Administrative skills
5	**Diversity in the workplace**	o Cultural sensitivity o Invisible disabilities o Micro-aggressions o Addressing unconscious bias o Reporting and addressing discrimination o Pronouns and gender identity o Sexuality in the workplace

6	Professionalism	o Professional attire
		o Emotional intelligence
		o Expanding your professional vocabulary
		o Telephone etiquette
		o Best practices for leaving voicemails
		o How to work remotely
		o Building a positive reputation
		o Growing your professional network
		o Expressing appreciation
		o Workplace ethics
7	Understanding workplace harassment	o Manager-employee relationships
		o Defining a hostile work environment
		o Eliminating workplace bullying
		o Confidentiality
		o Addressing and preventing retaliation
		o Stalking in the workplace
		o Setting healthy boundaries
		o Supporting victims of harassment
		o Signs of sexual harassment
		o Inappropriate workplace relationships
8	Leadership	o Mentorship
		o Decision-making
		o Managing feedback
		o Change and transition management
		o Delegating
		o Evaluating team members
		o Developing incentive programs
		o Creating performance benchmarks
		o Using disciplinary action appropriately
		o Recognizing and rewarding success
9	Wellness	o Identifying and managing different types of stress
		o Developing work-life balance
		o Incorporating exercise into the workplace
		o Promoting mental health
		o Preventing burnout
		o Building a professional support system
		o Making sustainable lifestyle changes
		o Improving confidence
		o Positive social media habits

- **Practice quizzes and learning through gamification:** These are non-graded assessments that will help learners reinforce the knowledge that has been passed to them. These practice quizzes will be administered either by third-party tools or by the instructional design team. These quizzes will be in the form of games to act as a form of relaxed learning. Resources are available in the appendix.

- **Final Exams:** The final exam will capture all areas that were taught from the beginning of the training to the end, to test the remembrance, understanding and application of various concepts by participants for each learning track.

A Typical Day in Class:

S/N	Activities	purpose	Duration
1	Lecture Delivery	Revision of the Previous class and introduction to the day's topic	45 Mins
2	Break (watching video content on the topic for the day)	To arouse the curiosity and interest of beneficiaries	15 Mins
3	Lecture delivery	Deep dive into the day's topics	75 Mins
4	Class Activity	Students share their screens and attempt hands-on exercises in class	60 Mins
4	Q $ A	Dedicated to answering compiled questions from the students by the instructor	15 mins
5	Quizzes	Test Students understanding of the day's learnings	30 mins

Grading

The grading is targeted at measuring participant's ability to both learn, understand and apply knowledge gained during the training duration.

The following table shows the **grade weight distribution:**

Activity	Frequency		Weight
Weekly Quizzes and Class Activities	Weekly		30% of the total Cumulative Assessment
	Week 1 of each month	10 marks	
	Week 2 of each month	10 marks	
	Week 3 of each month	10 marks	
	Week 4 of each month (Covers everything taught in the month)	20 marks	
Mini Projects	Monthly		10% of the total cumulative assessment
Certifications	2 Verifiable Certifications		5% of the total cumulative assessment
Soft Skills Training Assessments	Cumulative score of all soft skills training assessments		5% of the total cumulative assessment
Attendance	Daily (2 marks every day, 10 marks each week)		10% of the total cumulative assessment
Community Project	4th month		5% of the total cumulative assessment of the total cumulative assessment

Final Exams	At the end of the training program	20% of the total cumulative assessment
Capstone Project	This is scored over 50, the score of the team becomes the score for all the individual members of that team.	15% of the total cumulative assessment

Please note;

1. **Every activity is compulsory in order for a beneficiary to graduate.**
2. **A beneficiary will be required to get an 80% cumulative assessment score or more to graduate.**
3. **Active participation in group projects is what counts as participation. The group project score will not be recorded for an inactive member of the group.**

Recommended resources by learning tracks:

- **Software Development**
  - Resources
    - https://Freecodecamp.org
    - https://W3schools.com
  - Skills Test
    - https://Hackerrank.com
    - https://Hackerearth.com
    - https://Codechef.com
    - https://Codewars.com
    - https://triplebyte.com/assessment-library
    - LinkedIn Skills Tests
    - https://app.pluralsight.com/score/skill-assessment/css/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/html-css-javascript/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/aspdotnet-core/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/working-with-rest-apis-in-javascript/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/using-the-dotnet-base-class-library/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/redux/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/c-sharp/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/react/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/dotnet-microservices/intro?context=skills#/v2/landing

- **Product Design**
  - Resources
    - https://ideasai.com/
  - Skills Test
    - https://app.uxcel.com/home
    - https://app.pluralsight.com/score/skill-assessment/ux-design/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/visual-design-ux/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/ux-research/intro?context=skills#/v2/landing

- **3D/MR**
  - Resources
    - https://Maximo.com
    - Adobe Fuse Software
    - Creating Games For Beginners Using Unreal Engine

- https://link.springer.com/article/10.1007/s10055-022-00632-8#Sec6
- https://www.blendernation.com/category/education/tutorials/
- https://studio.blender.org/training/
  - Skills Tests
    - Weekly 3D Design Challenge
    - https://app.pluralsight.com/score/skill-assessment/c-plus-plus/intro?context=skills

- **Data Science**
  - Resources
    - https://omdena.com
    - https://freecodecamp.org
  - Skills Tests
    - https://triplebyte.com/assessment-library
    - LinkedIn Skills Tests
    - https://app.pluralsight.com/score/skill-assessment/data-science-literacy/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/building-machine-learning-solutions-with-tensorflow-2/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/using-excel-2019/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/importing-data-with-python/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/interpreting-data-with-python/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/microsoft-excel-data-manipulation-analysis-presentation/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/microsoft-excel-programming/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/microsoft-power-bi-analysts/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/mysql/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/python-for-data-analysis/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/web-scraping-with-python/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/core-data-visualization-literacy/intro?context=skills#/v2/landing

- **Cyber Security**
  - Resources
    - https://www.coursera.org/professional-certificates/ibm-cybersecurity-analyst?trk_ref=caCareerCard
  - Skills Tests
    - https://triplebyte.com/assessment-library
    - https://app.pluralsight.com/score/skill-assessment/security-fundamentals/intro?context=skills#/v2/landing

- https://app.pluralsight.com/score/skill-assessment/network-forensics/intro?context=skills#/v2/landing
- https://app.pluralsight.com/score/skill-assessment/web-application-penetration-testing/intro?context=skills#/v2/landing
- https://app.pluralsight.com/score/skill-assessment/splunk-incident-detection-response/intro?context=skills#/v2/landing
- https://app.pluralsight.com/score/skill-assessment/splunk-fundamentals/intro?context=skills#/v2/landing
- https://app.pluralsight.com/score/skill-assessment/splunk-enterprise-security-administration/intro?context=skills#/v2/landing
- https://app.pluralsight.com/score/skill-assessment/penetration-testing-fundamentals-with-the-metasploit-framework/intro?context=skills#/v2/landing
- https://app.pluralsight.com/score/skill-assessment/incident-management/intro?context=skills#/v2/landing
- https://app.pluralsight.com/score/skill-assessment/incident-detection-response-fundamentals/intro?context=skills#/v2/landing
- https://app.pluralsight.com/score/skill-assessment/ethical-hacking/intro?context=skills#/v2/landing

- **Product Management**
  - Resources
    - https://www.coursera.org/projects/build-product-roadmap-aha
    - https://www.coursera.org/projects/automate-tasks-and-processes-with-jira
  - Skills Tests
    - https://www.linkedin.com/pulse/product-management-skills-assessment-ziv-gonen/
    - https://app.pluralsight.com/score/skill-assessment/project-management-for-professionals/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/exploring-stakeholder-needs/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/increasing-efficiency-with-kanban/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/intro-professional-scrum/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/scrum-master/intro?context=skills#/v2/landing
    - https://app.pluralsight.com/score/skill-assessment/practicing-agile-pmi-acp/intro?context=skills#/v2/landing

- **Mobile App Development**
  - Resources
    - https://www.coursera.org/projects/learn-object-oriented-programming-with-kotlin
    - https://www.coursera.org/projects/android-app-kotlin
  - Skills Tests
    - https://app.pluralsight.com/score/skill-assessment/flutter/intro?context=skills#/v2/landing

- ▪ https://app.pluralsight.com/score/skill-assessment/building-mobile-applications-with-react-native/intro?context=skills#/v2/landing

- **Blockchain Technology**
  - o Resources
    - ▪ [Blockchain Theory 101](#)
  - o Skills Test
    - ▪ https://www.testpreptraining.com/certified-blockchain-developer-ethereum-cbde-free-practice-test

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Using technology to advance sustainable human capital development in Africa