Blossom Academy
Course Catalog
2019 - 2020

COURSE CATALOG

2019/2020

Notice to Prospective Students

The Blossom Academy course catalog is aimed to assist and be a roadmap for our students. Blossom Academy expects all students to be familiar with our requirements outlined for this career intensive program set forth in this catalog. However, this course catalog is not a contract between Blossom Academy and our students. Blossom Academy has the power to change our policies, criteria, and format whenever our team expects see fit.

Our recent course catalog is available on our website and may be updated bi-annually. Please check this online course catalog version as the privacy, policy and program description may change during the academic program. This handbook is valid for the 2019-2020 academic program. As a prospective student you are advised to evaluate this catalog before applying. Interested persons should also access their interests and strengths in related areas of study of data analytics before applying. The Blossom Academy team can be reached at info@blossomacademy.co or through our website: www.blossomacademy.co

Mission and Values

We're about more than developing great talent and bridging the data science skills gap. We believe there are massive pools of incredibly talented youth across Africa; it is imperative to connect them to the global economy. The propelling force behind our work is to create the next generation of African data scientists, which fosters a mission to connect top talent from West Africa to the global economy by providing the necessary next-gen and leadership skills. Our vision is to create Africa's most diverse and dynamic community of highly skilled and creative data-driven leaders who are able to affect change and promote progress.

The Blossom Academy training program empowers students to be efficient in modern day careers, to facilitate a strong pathway for other top talent across West Africa. By the end of the six-month program, students will possess the analytical and soft skills required to succeed in data-driven careers. We have strategically partnered with several organizations to offer you the opportunity to thrive in our ever-changing global economy.

Objectives

The Blossom Academy Program accomplishes transformational outcomes through a live, cohort-based learning experience. The skills-based curriculum is designed in collaboration with industry employers, and pedagogically is reflective of an actual working experience. Students will be able to apply business and statistics knowledge in Excel, SQL, R, Python, and will also receive coaching and assessment in critical soft skills (communication, collaboration, critical thinking, positive attitude, and project management). The majority of this experience is delivered virtually, which enables Blossom Academy to leverage technology for quick, accurate students assessment, and personalized students experiences. The Program is intended for individuals who want to get into a meaningful career in data science or launch a data-driven startup. Our business model ensures we remain invested in our students' next step and continued success, which will be supported with alumni services and continuing education.

Program Description

Blossom Academy's program is designed by data science experts with industry and academic excellence. Our training consists of a rigorous workforce readiness, academic material that is instructed in person and online. Our hybrid model allows students to keep up with coursework anywhere in West Africa. While our in-person instructions helps students connect with leading data scientists and data science scholars who serve as guest lecturers and mentors. Since Blossom Academy believes in creating self-sufficient data analysts, scientists and architects, we take our professional readiness workshops very serious. While students work on data sets and other technical skill development exercises, we also expect students to research and access industry trends in articles.

The datasets students work on are industry leading projects that have application in real-world business and technology. As students learn and build their skills, they're gaining actual industry experience. Some of the hard skills include data wrangling, excel modeling, SQL, and machine learning. Soft skills include persuasive communication, time management, critical problem solving, and team dynamics. 1:1 Ratio Mentorship with data-enthusiasts.. We truly invest in the success of our students, providing in-depth, comprehensive instruction and personal attention, helping to ensure they will excel in their careers moving forward.

Our First Major: Data Analytics + Machine Learning

After speaking with hundreds of employers across dozens of industries, we identified a tremendous gap in skilled, available talent this area. Data analytics came up as a job in high demand across industries and one in which competency could be clearly demonstrated, so we developed our first cohort around that. It's also the perfect launchpad to commence one's journey as a data scientist.

After completing the course, students will be able to analyze large data sets and understand data science fundamentals. A minimum programming experience is required, but computer proficiency and a keen interest in problem solving is necessary. Students will also graduate with a portfolio and resume of real-world experience in the field. Blossom Academy is composed of three main experiences, which map to each trimester of the program. A total of about 800 clock hours are required for the program.

Selection Process

To be considered for admissions, applicants must be living in West Africa and be a university graduate. We give preference to masters students, and post national-service candidates from statistics, software engineering, and actuary science disciplines.

The Blossom Academy admissions process includes an application, data aptitude tests, program-solving evaluations, and an individual interview. Interviews are conducted over a video-conference using Hangouts. Each stage is evaluated on core competencies and the applicant must receive a minimum passing score to move onto the next stage. The main competencies assessed in applicants during the admissions process are leadership potential, critical thinking, communication, and our core values; G.R.I.T (Grit, Resourcefulness, Integrity, and Time Management).

Our program is very competitive. We had over 950 applicants for our recent cohort and selected 0.7% of the applicant pool.

Curriculum Outline

In Blossom Academy's Data Analytics & Machine Learning program you will learn how to:

- Frame and organize business questions in ways that can be answered through Big Data analysis and meet the information needs of a project.
- Acquire, process, and analyze data sets using data mining methods to discover patterns or do data exploration. Run, apply and test machine learning tools to different kinds of data.
- Interpret the results of data analysis and data mining to make predictions and establish the reliability of those predictions using RapidMiner, R and Python (optional).
- Communicate results to management and other non-technical audiences.
- Learn different methods of data visualisation using packages like ggplot.
- Practice sound version control and deploy your code using GitHub.
- Collaborate on teams to rapidly analyse business requirements, define solutions requirements and execute them in a competitive setting ("datathon").
- Market yourself to potential employers and land a career in technology.
- Apply Lean and Agile processes to plan and track your work on real-world projects.

Modules

Module 1: Data Analytics: Understanding Customers
Module 2:Predicting Profitability and Customer Preferences
Module 3: Deep Analytics and Data Visualization
Module 4: Big Data & Web Mining
Module 5: Final Project

This coursework is supplemented by a series of Q&As and guest lectures, featuring the experiences and insights of internationally-recognized executives and successful entrepreneurs. Additionally, students conduct bi-weekly talks by one of their peers about a data-driven topic of their choice. We also encourage "Storytelling Moments" every month or so. This is when students share their experience of achieving something extraordinary. For example, when one of our students - Bridget - was the only African student to win the ACM SIGHPC/Intel Computational and Data Science Fellowship, granting her $15,000 annually for study anywhere in the world, we blocked a few hours during a weekend meeting to hear about it!

Faculty

Fabiana Rizzieri
Fabiana is the Program Director at Blossom Academy. Fabiana brings teaching experience, a business perspective, and communication expertise. Prior to joining Blossom Academy, she worked at the Health Innovation Program at Impact Hub in Accra Ghana and contributed to the creation of UNFPA Leadership Training Project. She also worked at the World Food Programme to create a demand creation project to decrease stunting in Northern Ghana, and in Switzerland as a research assistant to understand the causes of medical mistakes. She holds a Dual Master Degree in Communications & Business Administration and a Master in Public Health from New York University.

Samuel Baafi Boakye
Samuel is the Lead Instructor at Blossom Academy. He currently leads Pydata Ghana and works as a Machine Learning Engineer at CYST Ghana,. His experiences range from creating

an Artificial Intelligence bot using machine learning algorithms like Naive Bayes, deep recurrent neural networks such as the LSTM and natural language processing techniques, writing scripts to automate data processing and extract insight from data, and creating dashboards and visualizations for management to make it easy to gain insight from data without having to code.

Yvette Kondoh

Yvette focuses on data analytics at Blossom Academy. She currently works as a data analytics scientists at Superfluid Labs and received her Masters of Science in Applied Statistics from Loyola University Chicago. Her experiences range from performing statistical analysis, cluster analysis, market basket analysis, feature engineering, data mining, data visualization, data storytelling and predictive modeling in R, Python and cloud-based platforms such as h2o Flow and MS Azure.

Richard Ackon

Richard focuses on machine learning at Blossom Academy. He has a background in computer engineering but self-taught in Data Science and Artificial Intelligence. He currently he works as a machine learning engineer at Kudobuzz where he focuses on building NLP products and recommendation engines to support marketing tools for SMBs. He's also a writer for Analytics Vidhya which is considered as one of the largest data science publications in the world by Udacity and an organizer for the Accra-Ghana Artificial Intelligence Meetup group.

Samuel Afriyie

Samuel focuses on career services at Blossom Academy. He currently works with Lenovo's data center group as a technical sales consultant. In this role, Sam facilitates prospecting campaigns to win new customers and assist in fulfilling most customer requests. He has expertise in data storage, compute and networking hardware technologies. With his great ability and human capital, Sam oversees employer partnerships and helps bring our trained students to the job market.

Blossomists Groups

Students are placed into groups of three to five - known as Blossomists - and work together as a team to complete their academic goals. These smaller teams are designed to have goals at the individual level and group level. Hence, students are not just preoccupied with their own learning, but are also concerned with their teammate's advancement. Every team has a designated team captain, who will be responsible for keeping each member accountable. We also believe practice fuels expertness. So we provide Blossomists the opportunity to work closely with high-growth startups from the beginning of the training program; positioning them to tackle meaningful data-related challenges from the start.

Blossomists are independent and autonomous; they decide how to plan their learning experience, how to organize themselves, and how to track progress. Regarding communication channels, for example, they either use Slack, WhatsApp, or G-chat. We've found that having independent and autonomous Blossomists working towards an end-goal (tied to a learning milestone) is a great way to put students in control of their own learning process. At the same time, it's proven to be, by far, the best way to teach collaboration and communication skills.

One final catch about Blossomists: at the end of each trimester, new Blossomists are formed. We do this to build adaptability skills. With this, students learn to be comfortable with building new working relationships.

Grading

At Blossom Academy, instead of having a traditional grading system, we have a points-and-reward system. Students start at zero points and earn points as they go. Students earn points in three distinctive ways:

- Points for effort: students are rewarded for completing certain activities, (like providing feedback to a peer) whether they do it well or not. These points value effort, not performance.
- Points for performance: students also earn points for doing well on certain activities. The better they do it, the more points they earn. This is typically the case of datasets, where to earn the full amount of points, students must correctly analyze the data and demonstrate having used the best problem solving skills.
- Points for outstanding work: students also earn points for demonstrating outstanding behavior in certain areas, like teamwork, communication and any other behavior teachers want to foster.

Successful completion of the program requires a minimum completion score of 80% on assignments, 100% completion of projects, and 90% participation in instructional activities and overall program attendance.

Attendance

Blossom Academy is a six-month data science training program. Classes are taken on the pace of Blossomists, as our model allows us to foster competitive peer learning and independence. In addition to online class meeting times, it is mandated that students attend all bi-weekly meetings, as well as any in-person or datathons hosted by Blossom Academy or affiliate companies. All sessions are conducted live either over the internet via Hangouts or in person at our facility in Accra, Ghana.

Attendance in an online school is as important as attendance in a traditional classroom. It takes a lot of self-motivation for students to direct their own learning, and active participation allows them to not only learn from their instructors, but also from their classmates - ultimately broadening perspectives. Blossomists meet online twice a week to discuss their progress.

Students are allowed up to two (2) excused absences per trimester. If a student knows she or he will be absent for any reason, it is their responsibility to email the program director and copy the company email (info@blossomacademy.co). This email should be sent at the start of any week (Monday) when a student expects to be absent. For example, if students plan to be absent on a Thursday, they should email the appropriate staff member on the previous Monday. For absences that are planned well in advance, it is the student's responsibility to indicate those dates in the New Student Survey assigned during the selection process. Students that miss more than two days of instruction per trimester without notifying Blossom Academy staff will be subject to dismissal from the program. Students are responsible for attending office hours and learning any material they may have missed during their absence. We understand that emergencies come up and can result in unexpected absences. Please notify Blossom Academy of these situations as soon as possible.

Facilities

Blossom Academy class sessions will take place online via Hangouts and at the Blossom Academy Headquarters, which is located in Accra-Ghana; Adjacent to GIZ, Airport Residential on Volta Street. Students are required to have access to high-speed internet that allows for video chat communication. The students suite - which has fast reliable WIFI - contains a large area for lectures and large group projects, whiteboards and a projector for use during guest lectures and Q&A sessions.

Equipment

Students are responsible for providing their own desktop computer or laptop (PC or Mac) that is less than 4 years old and is not a Chromebook. An internal or external microphone and webcam are also required. No equipment is purchased through Blossom Academy.

Learning Resources

Blossom Academy provides all necessary learning materials through the student learning management system, Piazza. Students can access assessments, readings, recordings of previous lectures, and group forums. Students are also given Slack accounts to communicate directly with their instructors and cohort-mates.

With the exception of the resources listed below, all texts and sources necessary for class reading or reference for the Blossom Academy Program are available on the Internet free of charge. Either hyperlinks to these texts and sources or information sufficient to find the texts and sources with the use of a search engine will be provided over the course of the program by logging into Piazza.

Standards for Student Achievement

Pedagogically, we want our assessment to resemble the working world as much as possible. We assess the skills and tools that are relevant to job success, and deliver the feedback in a manner similar to real-world employment (performance reviews, check-ins, email feedback).

The three areas we assess students in are:
- Content & Tools: This includes domain knowledge in business and technical areas (Accounting, Finance, Marketing, Stats), as well as the ability to apply these concepts in tools (Excel, PowerPoint, R, SQL, Python). We assess these through quizzes, exercises, and a final project at the end of the program.
- Soft skills: Through all aspects of the program, we are assessing students on 5 soft skills: communication, collaboration, critical thinking, positive attitude, and project management. Instructors, peers, and advisors will all provide input into these ratings, and they will be collated and distributed twice a trimester.
- Engagement: This will be assessed through each trimester as well and is a function of how active students are in the overall program. This includes whether they are showing up to all activities, whether they are showing up on time, and whether they are (constructively) participating while there.

Students are required to meet a minimum proficiency in Content & Tools before moving on to the next trimester. Students will see their current status which is updated after each quiz and project, so they will know where they stand. We support them to reach this proficiency with

office hours and 1:1 check-ins (which become required if students are below the basic threshold). For students that do not meet the above assessment, they will be asked to join the subsequent cohort so they can use the additional time to build their skills.

Credit for Prior Learning

Although we encourage everyone to come in with basic knowledge of statistics and excel, we do not require or accept credits earned at other institutions or through challenge examinations and achievement tests. Blossom Academy does not have any transfer agreements with other colleges or universities, and does not award credit for prior experiential learning.

All instruction and coursework will be in English. Blossom Academy will require documentation as proof of English language proficiency, as English language services will not be provided. We require English fluency as established by our admissions staff and technical assessment. Please note that no external qualification (e.g. TOEFL, IELTS) will be considered in lieu of our individual assessment.

Leave of Absence Policy

A leave of absence is generally not permitted unless under extenuating circumstances. Any prior engagements that would require an extended absence from the program need to be submitted and approved by the administration prior to the start of the program. It is the responsibility of the student to complete all coursework that was assigned during their leave.

Student Rights

Students have the following rights:
- Students have the right to equal opportunity education and non-discrimination based on sex, race, color, religion, ancestry, national origin, disability, medical condition, genetic information, marital status, sexual orientation or other categories protected by law of the states in which we operate.
- Students have the right to cancel or withdraw from their course, per Blossom Academy's Cancellation, Withdrawal and Refund Policy.
- Students have the right to file a grievance, per Blossom Academy's Grievance Procedure.

Grievance Procedure

Blossom Academy aims to provide a high quality and safe learning environment for all students and staff. Any student that feels their rights have been violated are strongly encouraged to bring the issue to Blossom Academy leadership by emailing info@blossomacademy.co. The leadership team will review the grievance and take necessary steps with the student to find a solution to the problem.

Probation and Dismissal Policy

- Students must maintain good academic standing throughout their time at Blossom Academy. Good Standing includes completing required assessments as well as maintaining a responsible attendance record.

- Students are held accountable to the academic expectations of the program. If a student fails to complete the academic work required of the program, they will be dismissed from the cohort. Specific details of this policy are outlined below.
- Late or incomplete work: students that hand in more than 2 assignments late or incomplete in a given trimester will be called in for an in-person 1:1 meeting with a Blossom Academy staff. If after a 1:1 meeting, student behavior does not improve, she/he will be subject to dismissal from the program.

Academic Dismissal

While we will do our best to provide guidance and assistance to a struggling student, if the student cannot keep up with the coursework, they will be subject to academic dismissal.

Students who have been academically dismissed and would like to return to Blossom Academy will be required to reapply for admissions. A re-enrollment application will only be considered if the student is able to provide evidence of an improvement on their readiness and motivation for the program. Any re-enrollments after a dismissal must be approved by the administration.

Violations Dismissal

If a student violates the rights of another student or staff member, they will be subject to removal from the program immediately.

Retention of Student Records

Blossom Academy stores all student records electronically in HubSpot indefinitely, our main database of information. This includes the student's contact information, admissions application, challenge results, group and individual interview evaluations, enrollments, and completion of modules throughout the program. Blossom Academy is committed to safeguarding the privacy of our students. We will never sell or share any personal information.

Career Services and Career Placement

Throughout the training program, students will receive tools, strategies and support to seek either employment in data science or launch a data-driven startup.

Housing

Blossom Academy is a non-residential program, however we do require our students to live within 50 miles of the cohort location in order to attend our bi-monthly lectures and workshops without commute constraints throughout the program.

Schedule of Charges

Tuition: The tuition for the program is $500.00.

Admissions Deposit: To reserve a spot in the cohort, students are required to pay a $250.00 non-refundable admissions deposit.
Pay-As-You-Learn Model: With this model, students are required to pay $50.00 each month for the next 5 months of the training ($250.00 total).

Payment Plan Option: Based on financial assessments, select students make the non-refundable admissions deposit and the final payment is made once the student is hired. This method is proof of Blossom's commitment to help students find high quality employment quickly.

Students' have the right to cancel the agreement and withdraw from the program at any time. Cancellation is effective on the date Blossom Academy has received an email to info@blossomacademy.co. If the cancellation is after the first 28 days of the program, the registration fee will be credited to the tuition and tuition will be prorated based on percentage of the program completed. The admissions deposit is non-refundable at any date.

For the purpose of determining the amount a student owes for time attended, a student shall be deemed to have withdrawn from a program when any of the following occurs: (a) The student notifies Blossom Academy of withdrawal or the actual date of the withdrawal (b) Blossom Academy terminates the student's enrollment, (c) The student fails to return from a pre-approved Leave of Absence. If the student withdraws from Blossom Academy, or if Blossom Academy terminates the student's enrollment on or before the 28th day of the program, no tuition is owed. Withdrawing after 28 days, but prior to completing 60% of the program will result in pro-rata tuition based on length of attendance. If 61% or more of the program has been attempted, there is no reduction in tuition.

NOTICE CONCERNING TRANSFERABILITY OF CREDITS AND CREDENTIALS EARNED AT OUR INSTITUTION.

The transferability of credits you earn at Blossom Academy is at the complete discretion of an institution to which you may seek to transfer. Acceptance of the hours you earn in Blossom Academy is also at the complete discretion of the institution to which you may seek to transfer. If the credits that you earn at this institution are not accepted at the institution to which you seek to transfer, you may be required to repeat some or all of your coursework at that institution. For this reason you should make certain that your attendance at this academy will meet your educational goals. This may include contacting an institution to which you may seek to transfer after attending Blossom Academy to determine if your credits will transfer. Blossom Academy does not award credit for prior experiential learning.

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