

**CALIFORNIA INSTITUTE OF CAREER DEVELOPMENT
(CICD)**

CATALOG

2024

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**01/01/2024 – 12/31/2024
Revised: January 05, 2024**

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Mission Statement

To empower youth and adults of disadvantage and disaster affected communities with life changing and career focused educational training and thus to enable a productive community.

PURPOSES:

As we come out of the once a life-time pandemic induced economic disaster, the lower end of our workforce is going to face a life-changing reality. Millions of non-college-educated adults and youths are going to find it difficult to grapple with the reality of a fewer number of jobs and opportunities. This sector of the workforce needs to be trained with career program that are going to be a fit for the ever-changing labor market demands.

OBJECTIVES:

- ✓ To develop each student's understanding of the information and language specific to his/her career field.
- ✓ To provide students with all the materials, faculty and administrative support needed to successfully complete their non-degree.
- ✓ To encourage and foster the value of life-long learning in our students.
- ✓ To provide students with the most up-to-date and comprehensive information available in their field of study.

- ✓ To utilize evaluation tools and materials which require the students to effectively demonstrate the integration of the concepts and skills they have learned.
- ✓ To give graduates a well-rounded introduction to Office and Business Administration Assistant fields.
- ✓ To give graduates a well-rounded introduction to Medical Assisting, including clinical, laboratory, and administrative fields.
- ✓ To equip graduates with the skills and confidence required to meet the patients' needs in different environments (Medical Assisting).
- ✓ To give students familiarity in medical terminology, office accounting practices, insurance coding and billing, medical documentation, the patient record, and other health care administration topics (Medical Assisting).
- ✓ To give students familiarity in Basic Medical subjects, train the students in back office clinical procedures, and laboratory procedures (Medical Assisting).
- ✓ To give graduates a well-rounded introduction to Office Business Administration and Business Finance Administrative Assistant, including real-time case studies in the administrative fields.
- ✓ To give graduates a well-rounded introduction to the career field of Software Quality Assurance including

automation, DevOps (development and Operations),
Data Mining and Analysis, Web, and Mobile Application
Development and in Digital Marketing.

Ownership

The California Institute of Career Development (CICD), is a **non-profit** organization established in April 2021, is a full-service career development training Institute located at 1631 N. First Street, #300, San Jose, CA 95110 (proposed physical location). CICD specializes in training anyone who is displaced due to economic, technological and safety effects of COVID-19 pandemic on any industry that has been shaken out.

CICD is committed to providing quality programs to help students achieve their lifelong personal and professional goals. We are a non-profit corporation, which provides career solutions to Service / IT and Medical providers. We will be enrolling students and helping them fulfill their goals and achievements. The first batch of students enrolled will be of Office and Business Administration, and it is first batch to graduated in 2023.

CICD Mission is to empower youth and adults of disadvantage and disaster affected communities with life changing and career focused educational training and thus to enable a productive community.

CICD received its non-profit registration from the Secretary of State

of California. The programs offered by CICD are vocational in nature and provide certificates on successful completion of the program. In a typical year CICD enrolls up to 50 – 100 or more students. The enrollment takes place throughout the year.

CICD is developing its reputation by making lasting improvements in organizations, and offering solutions that are practical, innovative, and cost-effective. Our expertise provides informative and current, lecture- based education, while our competency-based training provides the relevant skill development for our graduates for their chosen career. This winning combination prepares them to meet, and surpass, the demands oftoday's employers.

CICD offers hands-on education using the latest in Healthcare and Information Technology; develop professionalism, flexibility, responsibility, and skills needed to be successful in the health care field. Continuous Job Placement Assistance (in the field of study) for eligible graduates, Short- Term Industry-Related Training, Tutoring, Library Services, Advisory Programs, and Externships are among the benefits found at the CICD.

CICD is a legitimate non-profit corporation registered in the State of California. The facility and equipment used fully comply with all federal, state, and local ordinances and regulations, including requirements for firesafety, building safety, handicapped access, and

health.

General Information

Approvals

The institution is a private institution, that is approved to operate by the bureau, and that approval to operate means compliance with state standards as set forth in the CEC and 5, CCR. An institution may not imply that the Bureau endorses programs, or that Bureau approval means the institution exceeds minimum state standards.

Non-Discrimination Policy

CICD is non-sectarian and does not discriminate about race, creed, color, national origin, age, sex, disability, or marital status in any of its academic program activities, employment practices, or admissions policies. The Institute does not accept any foreign students thus no Visa service is provided. Institute does not provide instruction in any other language other than English.

Admission Requirements

Requirements for admission at CICD are based upon the applicant's career goals, their motivation to succeed, and their ability to benefit from the professional or occupational training they have chosen.

Steps towards enrollment

All applicants are required to complete a personal interview with a counselor

to mutually determine whether the program meets the needs of the applicant and are given a guided tour of the facility, a thorough presentation of the training program they are interested in and are qualified for and receive information on tuition and fees. During this process, the Institute administers the Wonderlic test to Medical Assistant course applicants who are not high school graduates or its recognized equivalent. In addition, all applicants must be able to demonstrate access to fiscal resources adequate to meet the financial obligations associated with the training.

All students, including those with physical or mental handicaps, are considered for acceptance according to the admissions standards stated in this catalog.

To be considered for the admission to all the programs, applicants must:

General Requirement:

- Be 17 years of age or beyond the age of compulsory school attendance in the State of California.
- Be a high school graduate or its recognized equivalent; or pass the institute's ATB entrance exam.

For 'Web and Mobile Application Development' program:

- Should have at least one year programming and computer experience or its equivalent.
- Minimum 3 Months experience or equal education in of Scripting Skills
Python, Java, Perl, SQL, XML
- Minimum 3 Months experience or equal education in HTML and CSS.

For 'Data Mining – Data Analyst' program:

- Be an Associate degree Holder or its recognized equivalent.
- Should have at least one year programming and computer experience or its equivalent.
- Minimum 3 Months experience or equal education in of Scripting Skills Python, Java, SQL, XML
- Minimum 3 Months experience or equal education in Database Management System.

For 'DevOps – Development and Operations' program:

- Be an associate degree Holder or its recognized equivalent.
- Should have at least one year programming and computer experience or its equivalent.
- 3 Months of Linux Scripting experience or equal education.
- 3 Months of Networking experience or equal education.
- 3 Months of Web Services experience or equal education.

For 'Software Quality Assurance Automation' program:

- Should have at least one year programming and computer experience or its equivalent.
- Minimum 3 Months experience in Scripting Skills Python, Java, Perl, SQL, XML or equal education.
- Minimum 3 Months experience in HTML and CSS or equal education.

Transfer of Credits

The transferability of credits you earn at CICD is at the complete discretion of an institution to which you may seek to transfer. Acceptance of the diploma you earn in Medical Assisting is also at the complete discretion of the institution to which you may seek to transfer. If the diploma, or certificate that you earn at this institution is not accepted at the institution to which you seek to transfer, you may be required to repeat some or all your coursework at that institution. For this reason, you should make certain that your attendance at this institution will meet your educational goals. This may include contacting an institution to which you may seek to transfer after attending CICD to determine if your diploma or certificate will transfer.

Students desiring credit for previous postsecondary education or experience will be interviewed and tested to determine the level at which they may be able to join a class already in progress. Students who wish to transfer credit from another institution must provide an official transcript from that institution. Final determination related to the award of transferred credit or credit for experience will be at the sole discretion of CICD. Students granted credit would have their tuition reduced by an amount determined by the CICD by prorating the tuition.

Students already enrolled and are changing programs will be evaluated for satisfactory progress in their previously enrolled program to determine which credits can be considered for transfer to the new program. If transferable units are found, then the length of

the new program will then be adjusted, and appropriate tuition credits will be applied.

The transfer of credit is accepted only from schools accredited by an agency recognized by the U.S. Department of Education or the Council for Higher Education Accreditation.

The Institute does not have any transfer or articulation agreements between the institution and any other college or university that provides for the transfer of credits earned in the program of instruction.

Currently, no credit for prior experiential learning is granted by this institution.

English Proficiency

Programs offered by CICD are open to all who have graduated from high school with a diploma or an equivalent. If the applicant does not meet the above-mentioned requirement, he or she is requested to take a basic admission test which tests his or her ability to grasp, comprehend and communicate with others.

During the enrollment process, candidates must interview with the admission staff, tour our facility, and provide evidence for having completed a high school diploma or equivalent. Candidates must demonstrate proficiency in English language prior to enrollment. CICD does not train candidates in the English language or have the resources to translate the classroom lecture sessions in any other language.

Admission of students from countries where English is not the primary language or whose native language is not English must provide CICD with one of the following:

- 1) Test of English as Foreign Language (TOEFL) exam score of at least 500 or higher (paper version) or a score of 150 on the computer-based version.
- 2) Completion of a high school diploma or college-level program in a nation that uses English as the language for education.

Ability to Benefit.

All applicants are required to meet the counselor to mutually determine whether the program meets the needs of the applicant. The students will be eligible for medical assistant. The information packet will be given for the respective program accompanied by a guided tour of the facility. Career Counselor will assess if the program benefits the student to enhance his/her skills.

The Institute administers the Wonderlic test to all applicants. In addition, all applicants must be able to demonstrate access to fiscal resources adequate to meet the financial obligations associated with the training.

Records Maintained

1. The student's personal and academic progress records are maintained like the attendance rates, test scores.
2. The admission office maintains the documents of the personal

interview and recommendation made by the interviewer.

3. Test scores from Wonderlic test. Documents from the counseling sessions
4. Documents from the initial screening sessions which include marketable skills and employment background.

Test Administered:

The WONDERLIC testing system is used to determine Ability to Benefit or A.T.B... Not all tests designed by WONDERLIC are eligible to determine A.T.B... Therefore, only the WBST test is utilized.

The Exam is administered only to students without a high school diploma or its recognized equivalent who wish to enter the Medical Assisting Program. The percentage of non-passing students ranges from ten to twelve percent depending upon the minimum requirements that each program necessitates. The results of the testing must be periodically registered with WONDERLIC, and an official report of the testing is sent to both the school and student.

ENTRANCE/ASSESSMENT TESTING

Wonderlic is a test that measures general cognitive ability (ability to learn, understand instructions and solve problems). The school has established a raw score of 200 verbal skills and 210 quantitative skills to be a minimum entrance score. Additional testing can be administered to help determine a prospective student's ability to be trained to perform tasks associated with the occupations and job

titles for which training is to be offered. All scored test score sheets must be kept in each student's file.

TEST ADMINISTRATION:

There exists a situation known as the Testing "Bill of Rights".

These are things that make the testing as accurate and valid as possible.

- (1) The Testing Environment must be conducive to testing,
Example: No Distractions or Noise, Good Lighting, Good Ventilation
- (2) Client Awareness: The client needs to understand why they are being tested.
Explain the process in detail. Encourage them to do their best. Grade the Test ASAP.
- (3) Standardization of Instructions; Make sure the client has a good understanding of how to do the test. If they cannot do the practice session, then you need to make judgment on whether to do the test. Demonstrate - but do not let the client come to you into helping them.
- (4) Client Observation: Your personal observations, including subjective comments are important. Look for things such as
Does the client have trouble seeing or hearing? Did their injury cause them trouble during testing? What was their attitude?
These types of observations need to be noted because they may influence the testing results,

ENTRANCE ASSESSMENT MANUALS, INCLUDING MASTER EXAMS, ANSWERSHEETS AND SCORING GUIDES ARE PROVIDED TO EACH BRANCH. GUIDELINES FOR ADMINISTERING & SCORING THE WONDERLIC ENTRANCE TESTS

The WBST is a standardized test, approved for use by the U.S. Department of Education, that measures general cognitive ability. Cognitive ability is the ability to learn, understand instructions and solve problems.

THE SCORED ANSWER SHEET WILL BE RETAINED FOR THE STUDENT'S FILE

Evaluation:

Annual Evaluations of the ATB student is done to keep track about the validity of the admission and the progress of the student academically with the help of the test scores and attendance Standards for Satisfactory Progress

STANDARDS FOR SATISFACTORY PROGRESS

These standards apply to all students. Continued enrollment as regular students is allowed only for those who meet the minimum standards set forth for satisfactory progress.

Students enrolled in Medical Assisting Program are in satisfactory progress if —

- ✓ Absences are no greater than 24 hours of clinical practice per

module and have made up all absences.

- ✓ Late arrivals in class are no greater than 3 times in each module and have made up for all missed material.
- ✓ Have maintain a grade average of 75% (C) or greater with no score of less than 75% (C) on any exam, test, assignment, or project; and
- ✓ Have demonstrated satisfactory clinical skills and proper attitude appropriate to the nursing profession.

Maximum Timeframe for Program Completion

The Programs have a maximum time for completion that is equal to 1.5 times the total length of the program (e.g., 36 weeks for a 24-week program or 900 hours for a 600-hour program). Periods during which the student is interrupted during their training, for reasons deemed acceptable by the institute (medical leave of absence, etc.) are considered in the calculation of the maximum times for completion.

INCREMENTS:

The maximum times frame will be based on the clock hours of the program; the maximum times frame will not exceed more than 150% of the total clock hours of the program.

Excused Absences

1. Personal illness

2. Severe illness or death in family
3. Religious observances
4. Required court appearances.
5. Medical, dental, or legal appointments
6. Family-related emergencies

Both attendance participation and academic performance (grades, works, assignments, projects, and externship) are considered in the measurement of satisfactory progress.

REPORTING:

Both attendance participation and academic performance (grades, works, assignments, projects, and externship) are considered in the measurement of satisfactory progress. Progress is reported at 50% and 100% of the maximum program length.

Students enrolled in the programs are in satisfactory progress if:

- ✓ Have at least attended and completed 35% of the program, with a grade average of at least 70% (C) with no score less than 70% (C) in any tests, assignments, projects, at the 25% point of the maximum timeframe allotted for the program.
- ✓ Have at least attended and completed 60% of the program; with a grade average of 70% (C) with no score of less than 70% (C) on any tests, assignments, projects, at the 50% point of the

maximum timeframe allotted for the program.

Credits attempted in a course in which a grade of "Incomplete" is received will count as credits attempted in the calculation of maximum timeframe.

Leaves of absence are included in the maximum timeframe calculation. Students who withdraw without completing a course and who wish to re-enroll will be evaluated for satisfactory progress on credits attempted prior to withdrawal. The decision to accept the student is the sole discretion of the Institute. If allowed to re-enroll; the course which was not completed will be repeated. Students who fail to meet the minimum academic and attendance requirements are placed on probation until their performance becomes satisfactory.

APPLICABILITY

The above policies are applicable for both full-time and part-time students. At the end of each increment the student's progress will be evaluated whether the student met the required completion to move into the next increment if any.

Appeal

Students who are not in satisfactory academic progress may appeal against the Institute's decision in writing to the Chief Academic Officer. The Institute must receive the appeal from the student within three business days of being notified of the non-satisfactory academic

progress. All appeals will be responded to within ten (10) business days of receipt by the Institute.

Re-Establish Satisfactory Progress

Should students return to the institution to re-establish the satisfactory progress the student must provide the documentation of the progress to the chief academic officer, and he would be able to determine if he could re-establish.

Attendance Requirements

Regular attendance by students at scheduled class meetings, clinical labs or other activities assigned, as part of a course or program, is required. Minimum attendance of 80% is required to graduate. A student must obtain permission from the instructor if he or she is absent for more than 2 days in a week. Occasionally, personal circumstances may arise which may render it impossible for students to attend scheduled classes and activities. Whenever such circumstances can be anticipated, a student should confer with his or her instructor, so the faculty has an opportunity to offer the student the option of making up the missed material. In cases of unforeseen circumstances, a student should consult with his or her instructor to arrange for make-up work. Class time missed due to late arrivals, early departures, or other absences from class or clinical practice is counted along with whole day absences to calculate a student's total class hours attended.

Absences within a given week may be made up for educational purposes and for the sake of progress by one of the following:

Theory class may be made up only by attending a formal class during the same week but at a different time of the day than the individual's own class. The theory class must be the identical presentation missed, or by completing assigned projects or work identical or equivalent to those missed during the absence.

For medical Assisting students, the Laboratory time missed may be made up during the same week by attending another formal, equivalent laboratory session or activity. Any absence may be made up by attending a professional society meeting (AST, etc.).

It is the student's responsibility to collect handouts and assignments from the instructors that were given when he /she was absent. It is the student's responsibility to take any missed exams. He/she is advised to talk to the instructor and arrange a date for the exam to be taken.

Absences

Excused absences are those in which a student is absent from class or clinical practice due to personal illness, severe illness or death in the family, religious observances, jury duty, court appearance, medical, dental, or legal appointments or another duty/assignment connected with the Medical Assisting and cleared with the Director of Education. These absences will not be recorded but the student is responsible for materials or objectives missed. No make-up assignments will be

allowed. For absences over three

(3) consecutive days due to illness, the student must return to class with a doctor's note. Any condition or infection, especially skin or respiratory, or any disability such as a back injury will require clearance from the doctor.

Medical Assisting students may not miss more than 24 hours of Lab practice per module. Any absences incurred should be made up before the student can be allowed to move to the next module. If absences are incurred in the last module, the student may not graduate unless all missed theory and clinical hours are made up.

Tardiness

The Institute places upon its students the same demands that an employer will place upon them as an employee. Therefore, students are expected to be on time for each class session. A student who is not in attendance

Within fifteen (15) minutes of the scheduled class starting time will be documented as tardy unless written authorization by the Chief Academic Officer or the Director of Education is presented to the instructor. Excessive tardiness may lead to probation, suspension, or termination. Excessive tardiness is defined as being late or leaving early greater than 15% of elapsed program days.

Leaving Early

Students are expected to remain in class or clinical area for the entire session. A student who is not in class for the entire session due to

early departure will be documented as leaving early unless written authorization by the Chief Academic Officer or Director of Education is presented to the instructor.

Attendance Probation

A student will be placed on attendance probation if:

- a. The student is absent more than twenty percent (20%) of the elapsed program days.
- b. The Institute, at any time in its discretion, determines that the circumstances giving rise to any such student's absences are not reasonable.

A student will be placed on attendance probation if

- a. He/she misses more than two (2) days of theory per module and twenty-four (24) hours of clinical time per module.
- b. The Institute, at any time in its discretion, determines that the circumstances giving rise to any such student's absences are not reasonable.

If a student on attendance probation and or academic probation is absent or violates any of the terms of such probation, the Institute may, within its sole discretion, terminate and/or suspend such student. Any student on academic probation will be terminated if the student is absent more than twenty (20%) of the total class days.

Any student who is subject to termination for violation of the

attendance policy may petition the Chief Academic Officer, in writing, to remain in class. Such a petition must include the extenuating circumstances justifying the request to remain in class. The determination of the student's written petition will be made by the Institute in its sole discretion and will be final and binding on the student. Students who are on academic probation and who violate the attendance policy will be terminated.

Leave Of Absence (LOA)

Leave of absence may be granted; maximum leave of absence for a twelve-month period may consist of non-consecutive days.

Leaves of

Absence granted under this section are not counted toward the twenty percent (20%) maximum absences allowed under the "Attendance Requirements" section. Students requesting a leave of absence must submit a written request, supported by acceptable documentation, to the Chief Academic Officer or the Director of Education. The request must contain the dates of the requested leave and the reason for the request. The Chief Academic Officer or the Director of Education shall indicate the Institute's approval or denial of the leave of absence by signing the form and placing it in the student's education file with a copy being furnished to the student and the Financial Officer. The determination of the student's written request for a leave of absence will be made by the Institute in its sole discretion and will be final and binding on the student.

Students are responsible for contacting the appropriate faculty member to arrange for make-up of class work missed because of an approved leave of absence. Leaves of absence will result in the revision of the completion date, hence a delay in the graduation of the student from the program.

Students who refuse to abide by the Institute's leave of absence policy or who do not return on the scheduled date after a leave of absence will be withdrawn from the program. Petition for readmission must be done in writing.

Readmission is duly deliberated by the Instructor and C.E.O.

Grades

Grading is based on daily class, laboratory, and clinical performance, and the student's level of achievement on tests, laboratory projects and final examinations.

A	90% to 100%
B	80% to 89%
C	70% to 79%
F	below 69.9%
P	Pass A passing grade in a course designed as a pass-fail course
F	Fail A failing grade in a course designed as a pass-fail course
I	Incomplete
W	Withdrawal

Satisfactory academic progress means a minimum grade of "C in all tests, projects, and assignments; and an average of no less than "C" on all tests, projects, and assignments. Failed courses may be repeated only once.

All FAILED examinations, projects, and assignments must be made up or completed within one (1) week (5 school days) after the receipt of the score. Failed tests can only be made up once. The average of the tests scores is the final grade for that subject.

Failure to make up failed tests within the allotted time will result in non-satisfactory academic progress. Students who are not in satisfactory academic progress are placed on a 30-day probationary period.

Academic Warning

Any student who receives a grade lower than "C" in any course may be placed on academic warning. As a warning, the student will be counseled in the hope that their academic performance can be improved.

Academic Probation Policy

Any student who is not in compliance with the attendance and satisfactory academic progress policies will be placed on a 30-day probationary period. During this period, the student must pass all tests, assignments, and projects, with a grade of no less than "C", equivalent to 70%. Absences, including tardiness and leaving early

from class will not be allowed during this time. Any previously unsatisfactory or failed course work and absences must be made up during this period. Students receiving financial aid become ineligible and no disbursements will be made during this time.

If a student maintains a grade point average of "C", equivalent to 70%, and all previously unsatisfactory course work has been brought up to a satisfactory level by the end of the 30-day period, probation will be removed. However, if at the end of the probationary period, the student has failed to maintain a "C" grade point average and/or any unsatisfactory course work has not been brought up to a satisfactory level, the student will be dismissed from the program.

Termination by the Institution

The Institute may terminate a student for any one of the following reasons:

- ✓ Falsification of previous educational status on the Enrollment Agreement
- ✓ Failure to obtain satisfactory academic and attendance progress as specified in this catalog.
- ✓ Failure to adhere to the attendance requirements, or any other requirements, policies or procedures stated in this catalog or in the Enrollment Agreement.
- ✓ Failure to fully pay the program costs as agreed in writing.
- ✓ Destruction or damage to any property of the Institute (the student will also be liable for repair and/or replacement of any damaged property).
- ✓ Any unlawful or improper conduct (including but not limited to

the unlawful possession, use, or distribution of illicit drugs or alcohol), conduct contrary to the best interests of the Institute, or any conduct that discredits or mars the Institute or its reputation.

- ✓ Disruption of normal classroom discipline, or any act of insubordination.
- ✓ Unauthorized use or operation of any Institute equipment.
- ✓ Breach of any term of the Enrollment Agreement or this catalog.
- ✓ Cheating or dishonesty, such as during examinations, etc.
- ✓ failure to exhibit the highest quality of behavior, good citizenship, and respect for the community.

Appeal

Suspended or terminated students may appeal the Institute's decision in writing to the Chief Academic Officer. The Institute must receive the appeal from the student within three business days of being notified of the dismissal. All appeals will be responded to within ten (10) business days of receipt by the Institute.

Graduation Requirements

To be eligible for graduation a student must attain an overall cumulative grade of "C", equivalent to 70% or better and have passed all courses required in the program of study.

A diploma is awarded to students who fulfill all educational, financial, and administrative requirements of the program. These requirements include the timely submission of financial aid

documentation, clearance from the accounting office that all financial obligations have been met, and all academic projects have been completed (e.g., externship). A diploma certifies that the student has maintained the required academic average and has demonstrated proficiency in all the courses (didactic, clinical/practical) taken.

Transcripts

A copy of the academic transcript is available upon request by the student. This service is subject to the Family Educational Rights and Privacy Act of 1974, as amended. The Institute reserves the right to withhold an official transcript, if the student's financial obligation to the Institute is in arrears, or if the student is in arrears on any Federal or State student loan obligation. The Institute will provide unlimited number of official transcripts without a processing fee.

Diplomas and official transcripts of records are available within fifteen (15) days from the receipt of a written request by the Registrar.

“All student records and documentation except student transcript are required by the Reform Act of 1989 will be maintained at the main administrative office for a minimum period of five years. The transcripts are maintained **permanently**. Thereafter, all official student transcript records will contain the names of program into which students have enrolled, the names of all courses attempted,

whether completed, the academic grade earned, the year and quarter, and the number of units of credit earned and will be maintain **permanently**. Transcripts will provide to students upon written request.”

Student Services

The institution does not provide airport reception services, housing assistance or other services often afforded entering freshman at other institutions. Further, this institution maintains a focus on the delivery of educational services. Should a student encounter personal problems which interfere with his or her ability to complete coursework, this institution will aid in identifying appropriate professional assistance in the student’s local community but does not offer personal counseling assistance.

The availability and approximate costs of a 1br/1ba apartment near our facilities are below.

South Bay Area (San Jose, Milpitas, Santa Clara, Cupertino, Sunnyvale, Mountain View):

- Availability: approximately 1800 rental postings monthly

Approximate cost: \$2,050.00 per month

Academic Advisement

As the Institute only offers one program, there are a limited number of issues that a student will encounter. Should a student not maintain

continuous enrollment, an issue may arise regarding the student's options in completing a program under the original requirements established in the catalog published at the time of the student's original enrollment or completing a program per the requirements of the currently published catalog. These are the types of issues to be addressed in Academic Advisement.

ACADEMIC APPEALS AND GRIEVANCES

CICD upholds the fundamental values of honesty, respect, fairness, and accountability, which fosters a learning environment with academic integrity at the forefront. CICD also understands there may be instances when a student disagrees with an academic decision or action resulting from a violation of policy and/or standard of academic integrity. To address these grievances, the Institute allows a process for students to appeal the Institute decision. An appeal may be made for specific reasons defined by the Institute Academic department, and all decisions made because of an appeal are final. Regarding an appeal for grades, the grievance and appeal process applies to final course and module grades, and students may file a grievance and appeal for personal extenuating circumstances only. As clarification, a student may not file a grievance or appeal on behalf of his/her class. Additionally, disagreement with an established school policy is not a valid reason for grievance and appeal.

Informal Appeal

- The student may initiate a informal appeal by contacting the faculty member or individual with whom the grievance arose, as soon as the discrepancy has been identified.
- An effort to resolve the matter informally should be made.
- If the matter cannot be resolved at this level, the student may request a formal appeal in writing and provide the written request to his/her Program Director within two (2) business days.

Formal Appeal

- The student may initiate a formal appeal by contacting the Program Director, in the manner described above, if the grievance is not resolved during informal appeal.
- The Program Director will determine if the grievance and appeal request is in accordance with policy requirements.
- If the grievance and appeal request is determined to not be in accordance with Institute policy (invalid), the request will be denied, and the student will be notified by the Program Director.
- If the grievance and appeal request is determined to be in accordance with Institute policy (valid), the Program Director will enlist the respective faculty member(s) and/or the Team Lead to review the appeal request.
- The Program Director will communicate the outcome of the formal review to the student within one (1) business day of the appeal request being received.

- If the matter cannot be resolved at this level, the student may request a Campus appeal in writing within two (2) business days to Institute Chief Academic Officer (CAO).

Final Appeal Hearing

- An appeal may only be initiated if a formal appeal was attempted but did not resolve the grievance.
- The student may initiate a final appeal by submitting the request for an Appeal Hearing in writing to the CAO.
- The CAO will investigate the request thoroughly, including interviewing all individuals involved and reviewing all documents that relate or may potentially relate to the student's grievance.
- The original decision will stand if after review of the information, the CAO determines that the request for appeal was thoroughly addressed during the formal appeal process and the outcome was justified.
- If the CAO concludes that the student has grounds for a final level appeal, a Campus Grievance and Appeal Committee hearing will be scheduled as soon as possible but no later than one (1) business day from the receipt of the written appeal request. The Committee will consist of:
 - CAO
 - Program Director
 - One full-time faculty member from the student's respective program
- Following the Committee's hearing (and the review by the CAO), the CAO will provide the student with a written summary within one (1) business

day of the hearing and any advising/action plan determined by the Committee.

- A copy of the signed advising/action plan is placed in the student's file and a copy is provided to the student. A scanned copy is uploaded to their student records file.

Decisions of the Chief Academic Officer are the final step in appeals within the processes and procedures of CICD. However, students may, at any time, submit their appeal and/or grievance to:

Bureau for Private Postsecondary Education

1747 North Market Blvd., Suite 225

Sacramento, CA 95834

(916) 574-7720

Fax (916) 574-8648

Telephone No: (888) 370-7589

Fax No: (916) 263-1897

Study Skills Development

Should students, returning to the institution after an absence of some years, have trouble in studying, the institute will provide references to

study-skills development guides that are readily available, at no charge, in the public domain.

Student Housing Assistance

- a) Institution has NO dormitory facilities under its control.
- b) Institution has no responsibility to find or assist a student in finding housing.

Career Development/Placement Assistance Services.

The Career Development staff serves as a liaison between the graduates and the medical community. Information on job search techniques is provided to students and graduates based on the current needs of local businesses and hospitals and clinics. However, no employment information or placement assistance provided by the Institute should be considered either expressly or implied as a guarantee or promise of employment, a likelihood of employment, an indication of the level of employment or compensation expected, or an indication of the types or job titles of positions for which students or graduates may qualify. This assistance consists primarily of educating students in developing the ability to successfully perform these tasks as they begin to seek employment. These tasks are taught towards the end of each program.

- ✓ Preparing resumes
- ✓ Developing job interviewing skills
- ✓ Identifying job position openings
- ✓ Following up with employers after interviews
- ✓ Maintaining employment once hired
- ✓ Developing and utilizing a network of professional contacts who can aid the job search effort.

Medical Assistant - National Occupational Employment and Wages, October 2021

31-9092 Medical Assistants

Perform administrative and certain clinical duties under the direction of a physician. Administrative duties may include scheduling appointments, maintaining medical records, billing, and coding information for insurance purposes. Clinical duties may include taking and recording vital signs and medical histories, preparing patients for examination, drawing blood, and administering medications as directed by physician.

[National estimates for Medical Assistants](#)

[Industry profile for Medical Assistants](#)

[Geographic profile for Medical Assistants](#)

National estimates for Medical Assistants:

Employment estimate and mean wage estimates for Medical Assistants:

Employment (1)	Employment RSE (3)	Mean hourly wage	Mean annual wage (2)	Wage RSE (3)
710,200	0.9 %	\$ 17.75	\$ 36,930	0.2 %

Percentile wage estimates for Medical Assistants:

Percentile	10%	25%	50% (Median)	75%	90%
Hourly Wage	\$ 12.95	\$ 14.59	\$ 17.23	\$ 19.85	\$ 24.32
Annual Wage (2)	\$ 26,930	\$ 30,360	\$ 35,850	\$ 41,280	\$ 50,580

Industry profile for Medical Assistants:

Industries with the highest published employment and wages for Medical Assistants are provided. For a list of all industries with employment in Medical Assistants, see the [Create Customized Tables](#) function.

Industries with the highest levels of employment in Medical Assistants:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Offices of Physicians	404,670	15.61	\$ 17.59	\$ 36,580
General Medical and Surgical Hospitals	106,290	1.90	\$ 18.37	\$ 38,200
Outpatient Care Centers	59,610	6.21	\$ 20.35	\$ 42,330
Offices of Other Health Practitioners	56,810	6.29	\$ 15.97	\$ 33,210
Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly	13,930	1.48	\$ 14.84	\$ 30,870

Industries with the highest concentration of employment in Medical Assistants:

Industry	Employment (1)	Percent of	Hourly	Annual
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		industry employment	mean wage	mean wage (2)
Offices of Physicians	404,670	15.61	\$ 17.59	\$ 36,580
Offices of Other Health Practitioners	56,810	6.29	\$ 15.97	\$ 33,210
Outpatient Care Centers	59,610	6.21	\$ 20.35	\$ 42,330
General Medical and Surgical Hospitals	106,290	1.90	\$ 18.37	\$ 38,200
Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly	13,930	1.48	\$ 14.84	\$ 30,870

Office and Business Administration - National Occupational Employment and Wages, October 2021

43-1011: First-Line Supervisors of Office and Administrative Support Workers

Directly supervise and coordinate the activities of clerical and administrative support workers.

[National estimates for First-Line Supervisors of Office and Administrative Support Workers](#)

[Industry profile for First-Line Supervisors of Office and Administrative Support Workers](#)

[Geographic profile for First-Line Supervisors of Office and Administrative Support](#)

Workers

National estimates for First-Line Supervisors of Office and Administrative Support Workers:

Employment estimate and mean wage estimates for First-Line Supervisors of Office and Administrative Support Workers:

Employment (1)	Employment RSE (3)	Mean hourly wage	Mean annual wage (2)	Wage RSE (3)
1,443,630	0.3 %	\$ 30.47	\$ 63,380	0.1 %

Percentile wage estimates for First-Line Supervisors of Office and Administrative Support Workers:

Percentile	10%	25%	50% (Median)	75%	90%
Hourly Wage	\$ 17.96	\$ 22.83	\$ 29.13	\$ 36.98	\$ 46.93
Annual Wage (2)	\$ 37,370	\$ 47,490	\$ 60,590	\$ 76,920	\$ 97,610

Industry profile for First-Line Supervisors of Office and Administrative Support Workers:

Industries with the highest published employment and wages for First-Line Supervisors of Office and Administrative Support Workers are provided. For a list of all industries with employment in First-Line Supervisors of Office and Administrative Support Workers, see the [Create Customized Tables](#) function.

Industries with the highest levels of employment in First-Line Supervisors of Office and Administrative Support Workers:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Credit Intermediation and Related Activities (5221 and 5223 only)	98,850	4.94	\$ 29.55	\$ 61,460
Offices of Physicians	76,450	2.84	\$ 28.58	\$ 59,450
Local Government, excluding schools and hospitals (OEWS Designation)	66,990	1.25	\$ 32.05	\$ 66,660
Management of Companies and Enterprises	57,090	2.25	\$ 36.64	\$ 76,220
General Merchandise Stores	51,630	1.67	\$ 22.56	\$ 46,920

Industries with the highest concentration of employment in First-Line Supervisors of Office and Administrative Support Workers:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Credit Intermediation and	98,850	4.94	\$ 29.55	\$ 61,460

Related Activities (5221 and 5223 only)				
Business Support Services	37,990	4.60	\$ 25.93	\$ 53,940
Freight Transportation Arrangement	9,650	4.14	\$ 32.92	\$ 68,470
Office Administrative Services	18,690	3.84	\$ 31.93	\$ 66,410
No depository Credit Intermediation	23,190	3.73	\$ 30.53	\$ 63,500

Top paying industries for First-Line Supervisors of Office and Administrative Support Workers:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Monetary Authorities-Central Bank	560	2.66	\$ 59.21	\$ 123,160
Other Pipeline Transportation	30	0.37	\$ 46.17	\$ 96,030
Electric Power Generation, Transmission and Distribution	5,090	1.35	\$ 45.18	\$ 93,970
Oil and Gas Extraction	750	0.70	\$ 44.29	\$ 92,130
Natural Gas Distribution	1,430	1.30	\$ 44.19	\$ 91,920

Data Analyst - National Occupational Employment and Wages, 2021

15-2051: Data Analyst

Develop and implement a set of techniques or analytics applications to transform raw data into meaningful information using data-oriented programming languages and visualization software. Apply data mining, data modeling, natural language processing, and machine learning to extract and analyze information from large structured and unstructured datasets. Visualize, interpret, and report data findings. May create dynamic data reports. Excludes “Statisticians” (15-2041), “Cartographers and Photogrammetrists” (17-1021), and “Health Information Technologists and Medical Registrars” (29-9021).

[National estimates for Data Scientists](#)

[Industry profile for Data Scientists](#)

[Geographic profile for Data Scientists](#)

National estimates for Data Scientists:

Employment estimate and mean wage estimates for Data Scientists:

Employment (1)	Employment RSE (3)	Mean hourly wage	Mean annual wage (2)	Wage RSE (3)
105,980	2.4 %	\$ 52.24	\$ 108,660	1.1 %

Percentile wage estimates for Data Scientists:

Percentile	10%	25%	50%	75%	90%
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			(Median)		
Hourly Wage	\$ 28.57	\$ 37.32	\$ 48.52	\$ 62.87	\$ 80.31
Annual Wage (2)	\$ 59,430	\$ 77,620	\$ 100,910	\$ 130,770	\$ 167,040

Industry profile for Data Scientists:

Industries with the highest published employment and wages for Data Scientists are provided. For a list of all industries with employment in Data Scientists, see the [Create Customized Tables](#) function.

Industries with the highest levels of employment in Data Scientists:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Computer Systems Design and Related Services	16,620	0.73	\$ 55.91	\$ 116,300
Management of Companies and Enterprises	12,570	0.50	\$ 51.95	\$ 108,060
Management, Scientific, and Technical Consulting Services	7,270	0.47	\$ 51.99	\$ 108,150
Scientific Research and Development Services	5,840	0.73	\$ 54.53	\$ 113,430

Credit Intermediation and Related Activities (5221 and 5223 only)	5,690	0.28	\$ 56.34	\$ 117,190
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Industries with the highest concentration of employment in Data Scientists:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Other Information Services	3,720	1.03	\$ 67.12	\$ 139,600
Scientific Research and Development Services	5,840	0.73	\$ 54.53	\$ 113,430
Computer Systems Design and Related Services	16,620	0.73	\$ 55.91	\$ 116,300
Software Publishers	3,710	0.70	\$ 52.92	\$ 110,070
Data Processing, Hosting, and Related Services	2,570	0.68	\$ 60.65	\$ 126,160

Top paying industries for Data Scientists:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Computer and Peripheral Equipment Manufacturing	400	0.26	\$ 71.29	\$ 148,290
Semiconductor and Other	620	0.17	\$ 68.34	\$ 142,150

<u>Electronic Component Manufacturing</u>				
<u>Other Information Services</u>	3,720	1.03	\$ 67.12	\$ 139,600
<u>Data Processing, Hosting, and Related Services</u>	2,570	0.68	\$ 60.65	\$ 126,160
<u>Accounting, Tax Preparation, Bookkeeping, and Payroll Services</u>	1,110	0.11	\$ 59.83	\$ 124,440

Mobile Application Development - Occupational Employment and Wages, May 2021

15-1255 Web and Digital Interface Designers

Design digital user interfaces or websites. Develop and test layouts, interfaces, functionality, and navigation menus to ensure compatibility and usability across browsers or devices. May use web framework applications as well as client-side code and processes. May evaluate web design following web and accessibility standards and may analyze web use metrics and optimize websites for marketability and search engine ranking. May design and test interfaces that facilitate the human-computer interaction and maximize the usability of digital devices, websites, and software with a focus on aesthetics and design. May create graphics used in websites and manage website content and links. Excludes “Special Effects Artists and Animators” (27-1014) and “Graphic Designers” (27-1024).

[National estimates for Web and Digital Interface Designers](#)

[Industry profile for Web and Digital Interface Designers](#)

[Geographic profile for Web and Digital Interface Designers](#)

National estimates for Web and Digital Interface Designers:

Employment estimate and mean wage estimates for Web and Digital Interface Designers:

Employment (1)	Employment RSE (3)	Mean hourly wage	Mean annual wage (2)	Wage RSE (3)
82,380	2.8 %	\$ 45.90	\$ 95,460	2.3 %

Percentile wage estimates for Web and Digital Interface Designers:

Percentile	10%	25%	50% (Median)	75%	90%
Hourly Wage	\$ 18.53	\$ 27.51	\$ 38.41	\$ 60.63	\$ 80.87
Annual Wage (2)	\$ 38,550	\$ 57,220	\$ 79,890	\$ 126,110	\$ 168,200

Industry profile for Web and Digital Interface Designers:

Industries with the highest published employment and wages for Web and Digital Interface Designers are provided. For a list of all industries with employment in Web and Digital Interface Designers, see the [Create Customized Tables](#) function. Industries with the highest levels of employment in Web and Digital Interface Designers:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Computer Systems Design and Related Services	16,080	0.71	\$ 48.33	\$ 100,530
Software Publishers	12,390	2.35	\$ 70.90	\$ 147,470
Advertising, Public Relations, and Related	4,320	0.99	\$ 35.34	\$ 73,500

Services				
Other Information Services	4,140	1.14	\$ 50.07	\$ 104,140
Management of Companies and Enterprises	3,690	0.15	\$ 44.03	\$ 91,580

Industries with the highest concentration of employment in Web and Digital Interface Designers:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Software Publishers	12,390	2.35	\$ 70.90	\$ 147,470
Other Information Services	4,140	1.14	\$ 50.07	\$ 104,140
Advertising, Public Relations, and Related Services	4,320	0.99	\$ 35.34	\$ 73,500
Sound Recording Industries	160	0.89	\$ 26.26	\$ 54,630
Electronic Shopping and Mail-Order Houses	3,380	0.73	\$ 38.84	\$ 80,780

Top paying industries for Web and Digital Interface Designers:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Software Publishers	12,390	2.35	\$ 70.90	\$ 147,470
Computer and Peripheral Equipment Manufacturing	210	0.13	\$ 54.62	\$ 113,620
Securities, Commodity Contracts, and Other Financial Investments and Related Activities	900	0.09	\$ 54.57	\$ 113,500

Personal Care Services	(8)	(8)	\$ 52.88	\$ 109,990
Credit Intermediation and Related Activities (5221 and 5223 only)	1,290	0.06	\$ 51.54	\$ 107,200

Software Quality Assurance Analysts and Testers - Occupational Employment and Wages, May 2021

15-1253 Software Quality Assurance Analysts and Testers

Develop and execute software tests to identify software problems and their causes. Test system modifications to prepare for implementation. Document software and application defects using a bug tracking system and report defects to software or web developers. Create and maintain databases of known defects. May participate in software design reviews to provide input on functional requirements, operational characteristics, product designs, and schedules.

[National estimates for Software Quality Assurance Analysts and Testers](#)

[Industry profile for Software Quality Assurance Analysts and Testers](#)

[Geographic profile for Software Quality Assurance Analysts and Testers](#)

National estimates for Software Quality Assurance Analysts and Testers:

Employment estimate and mean wage estimates for Software Quality Assurance Analysts and Testers:

Employment (1)	Employment RSE (3)	Mean hourly wage	Mean annual wage (2)	Wage RSE (3)
190,120	1.7 %	\$ 46.97	\$ 97,710	0.7 %

Percentile wage estimates for Software Quality Assurance Analysts and Testers:

Percentile	10%	25%	50%	75%	90%
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			(Median)		
Hourly Wage	\$ 23.54	\$ 34.57	\$ 47.22	\$ 59.88	\$ 73.68
Annual Wage (2)	\$ 48,960	\$ 71,910	\$ 98,220	\$ 124,550	\$ 153,250

Industry profile for Software Quality Assurance Analysts and Testers:

Industries with the highest published employment and wages for Software Quality Assurance Analysts and Testers are provided. For a list of all industries with employment in Software Quality Assurance Analysts and Testers, see the [Create Customized Tables](#) function.

Industries with the highest levels of employment in Software Quality Assurance Analysts and Testers:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Computer Systems Design and Related Services	63,670	2.81	\$ 47.09	\$ 97,950
Software Publishers	16,240	3.09	\$ 46.92	\$ 97,600
Employment Services	11,260	0.32	\$ 43.84	\$ 91,190
Management of Companies and Enterprises	10,880	0.43	\$ 47.82	\$ 99,460
Data Processing, Hosting, and Related Services	7,800	2.06	\$ 41.05	\$ 85,380

Industries with the highest concentration of employment in Software Quality Assurance Analysts and Testers:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
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Software Publishers	16,240	3.09	\$ 46.92	\$ 97,600
Computer Systems Design and Related Services	63,670	2.81	\$ 47.09	\$ 97,950
Computer and Peripheral Equipment Manufacturing	3,260	2.10	\$ 56.39	\$ 117,280
Data Processing, Hosting, and Related Services	7,800	2.06	\$ 41.05	\$ 85,380
Other Information Services	6,760	1.86	\$ 58.71	\$ 122,110

Top paying industries for Software Quality Assurance Analysts and Testers:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Automobile Dealers	100	0.01	\$ 70.13	\$ 145,860
Semiconductor and Other Electronic Component Manufacturing	2,090	0.59	\$ 60.46	\$ 125,750
Other Information Services	6,760	1.86	\$ 58.71	\$ 122,110
Natural Gas Distribution	220	0.20	\$ 57.51	\$ 119,610
Computer and Peripheral Equipment Manufacturing	3,260	2.10	\$ 56.39	\$ 117,280

Digital Marketing - Occupational Employment and Wages, May 2021

11-2011 Advertising and Promotions Managers

Plan, direct, or coordinate advertising policies and programs or produce collateral materials, such as posters, contests, coupons, or giveaways, to create extra interest in the purchase of a product or service for a department, an entire organization, or on an account basis.

[National estimates for Advertising and Promotions Managers](#)

[Industry profile for Advertising and Promotions Managers](#)

[Geographic profile for Advertising and Promotions Managers](#)

National estimates for Advertising and Promotions Managers:

Employment estimate and mean wage estimates for Advertising and Promotions Managers:

Employment (1)	Employment RSE (3)	Mean hourly wage	Mean annual wage (2)	Wage RSE (3)
22,520	3.4 %	\$ 68.68	\$ 142,860	1.9 %

Percentile wage estimates for Advertising and Promotions Managers:

Percentile	10%	25%	50% (Median)	75%	90%
Hourly Wage	\$ 29.45	\$ 45.20	\$ 61.13	\$ 82.79	(5)
Annual Wage (2)	\$ 61,250	\$ 94,020	\$ 127,150	\$ 172,210	(5)

Industry profile for Advertising and Promotions Managers:

Industries with the highest published employment and wages for Advertising and Promotions Managers are provided. For a list of all industries with employment in Advertising and Promotions Managers, see the [Create Customized Tables](#) function.

Industries with the highest levels of employment in Advertising and Promotions Managers:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
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<u>Advertising, Public Relations, and Related Services</u>	10,360	2.38	\$ 69.95	\$ 145,490
<u>Management of Companies and Enterprises</u>	2,370	0.09	\$ 70.85	\$ 147,370
<u>Other Information Services</u>	1,560	0.43	\$ 98.39	\$ 204,650
<u>Motion Picture and Video Industries</u>	990	0.31	\$ 87.50	\$ 182,000
<u>Management, Scientific, and Technical Consulting Services</u>	790	0.05	\$ 55.98	\$ 116,440

Industries with the highest concentration of employment in Advertising and Promotions Managers:

Industry	Employment <u>(1)</u>	Percent of industry employment	Hourly mean wage	Annual mean wage <u>(2)</u>
<u>Advertising, Public Relations, and Related Services</u>	10,360	2.38	\$ 69.95	\$ 145,490
<u>Other Information Services</u>	1,560	0.43	\$ 98.39	\$ 204,650
<u>Motion Picture and Video Industries</u>	990	0.31	\$ 87.50	\$ 182,000
<u>Newspaper, Periodical, Book, and Directory Publishers</u>	630	0.26	\$ 44.27	\$ 92,080
<u>Radio and Television Broadcasting</u>	500	0.26	\$ 55.77	\$ 116,010

Top paying industries for Advertising and Promotions Managers:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Other Information Services	1,560	0.43	\$ 98.39	\$ 204,650
Motion Picture and Video Industries	990	0.31	\$ 87.50	\$ 182,000
Architectural, Engineering, and Related Services	60	(7)	\$ 87.44	\$ 181,880
Scientific Research and Development Services	120	0.02	\$ 83.73	\$ 174,160
Computer Systems Design and Related Services	260	0.01	\$ 77.05	\$ 160,260

Web Application Development - Occupational Employment and Wages, May 2021

15-1254 Web Developers

Develop and implement websites, web applications, application databases, and interactive web interfaces. Evaluate code to ensure that it is properly structured, meets industry standards, and is compatible with browsers and devices. Optimize website performance, scalability, and server-side code and processes. May develop website infrastructure and integrate websites with other computer applications. Excludes “Special Effects Artists and Animators” (27-1014).

[National estimates for Web Developers](#)

[Industry profile for Web Developers](#)

[Geographic profile for Web Developers](#)

National estimates for Web Developers:

Employment estimate and mean wage estimates for Web Developers:

Employment (1)	Employment RSE (3)	Mean hourly wage	Mean annual wage (2)	Wage RSE (3)
84,820	2.7 %	\$ 39.09	\$ 81,320	1.1 %

Percentile wage estimates for Web Developers:

Percentile	10%	25%	50% (Median)	75%	90%
Hourly Wage	\$ 18.40	\$ 24.57	\$ 37.03	\$ 48.40	\$ 62.39
Annual Wage (2)	\$ 38,280	\$ 51,100	\$ 77,030	\$ 100,670	\$ 129,760

Industry profile for Web Developers:

Industries with the highest published employment and wages for Web Developers are provided. For a list of all industries with employment in Web Developers, see the [Create Customized Tables](#) function.

Industries with the highest levels of employment in Web Developers:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
<u>Computer Systems Design and Related Services</u>	17,750	0.78	\$ 40.29	\$ 83,810
<u>Advertising, Public Relations, and Related Services</u>	5,220	1.20	\$ 34.72	\$ 72,220
<u>Other Information Services</u>	5,220	1.44	\$ 43.29	\$ 90,030
<u>Management, Scientific, and Technical Consulting Services</u>	4,970	0.32	\$ 40.02	\$ 83,230
<u>Management of Companies</u>	4,290	0.17	\$ 45.71	\$ 95,090

<u>and Enterprises</u>				
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Industries with the highest concentration of employment in Web Developers:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
<u>Other Information Services</u>	5,220	1.44	\$ 43.29	\$ 90,030
<u>Advertising, Public Relations, and Related Services</u>	5,220	1.20	\$ 34.72	\$ 72,220
<u>Specialized Design Services</u>	1,350	1.00	\$ 33.91	\$ 70,530
<u>Sound Recording Industries</u>	160	0.93	\$ 34.78	\$ 72,350
<u>Computer Systems Design and Related Services</u>	17,750	0.78	\$ 40.29	\$ 83,810

Top paying industries for Web Developers:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
<u>Monetary Authorities-Central Bank</u>	100	0.48	\$ 59.05	\$ 122,820
<u>Securities, Commodity Contracts, and Other Financial Investments and Related Activities</u>	850	0.09	\$ 57.65	\$ 119,920
<u>Nondepository Credit Intermediation</u>	410	0.07	\$ 53.55	\$ 111,380
<u>Employment Services</u>	2,960	0.08	\$ 52.98	\$ 110,200
<u>Credit Intermediation and Related Activities (5221 and</u>	740	0.04	\$ 49.74	\$ 103,450

<u>5223 only</u>				
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Development and Operations - Occupational Employment and Wages, May 2021

15-2031 Operations and Development

Formulate and apply mathematical modeling and other optimizing methods to develop and interpret information that assists management with decision making, policy formulation, or other managerial functions. May collect and analyze data and develop decision support software, services, or products. May develop and supply optimal time, cost, or logistics networks for program evaluation, review, or implementation.

[National estimates for Operations Research Analysts](#)

[Industry profile for Operations Research Analysts](#)

[Geographic profile for Operations Research Analysts](#)

National estimates for Operations Research Analysts:

Employment estimate and mean wage estimates for Operations Research Analysts:

Employment (1)	Employment RSE (3)	Mean hourly wage	Mean annual wage (2)	Wage RSE (3)
98,700	3.2 %	\$ 46.07	\$ 95,830	2.1 %

Percentile wage estimates for Operations Research Analysts:

Percentile	10%	25%	50% (Median)	75%	90%
Hourly Wage	\$ 23.41	\$ 29.78	\$ 39.59	\$ 57.33	\$ 77.33
Annual Wage (2)	\$ 48,690	\$ 61,940	\$ 82,360	\$ 119,240	\$ 160,850

Industry profile for Operations Research Analysts:

Industries with the highest published employment and wages for Operations Research Analysts are provided. For a list of all industries with employment in Operations Research Analysts, see the [Create Customized Tables](#) function.

Industries with the highest levels of employment in Operations Research Analysts:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Management, Scientific, and Technical Consulting Services	11,510	0.74	\$ 64.32	\$ 133,790
Management of Companies and Enterprises	9,550	0.38	\$ 45.24	\$ 94,100
Computer Systems Design and Related Services	8,970	0.40	\$ 45.88	\$ 95,420
Credit Intermediation and Related Activities (5221 and 5223 only)	7,700	0.38	\$ 40.10	\$ 83,410
Insurance Carriers	7,400	0.62	\$ 41.58	\$ 86,490

Industries with the highest concentration of employment in Operations Research Analysts:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Management, Scientific, and Technical Consulting Services	11,510	0.74	\$ 64.32	\$ 133,790
Insurance Carriers	7,400	0.62	\$ 41.58	\$ 86,490
No depository Credit Intermediation	3,410	0.55	\$ 46.05	\$ 95,790
Scientific Research and Development Services	4,260	0.54	\$ 47.47	\$ 98,730
Cable and Other Subscription Programming	210	0.45	\$ 35.35	\$ 73,520

Top paying industries for Operations Research Analysts:

Industry	Employment (1)	Percent of industry	Hourly mean	Annual mean
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		employment	wage	wage (2)
Computer and Peripheral Equipment Manufacturing	270	0.17	\$ 104.43	\$ 217,210
Management, Scientific, and Technical Consulting Services	11,510	0.74	\$ 64.32	\$ 133,790
Business Schools and Computer and Management Training	70	0.10	\$ 63.83	\$ 132,760
Federal Executive Branch (OEWS Designation)	5,470	0.26	\$ 58.51	\$ 121,690
Engine, Turbine, and Power Transmission Equipment Manufacturing	180	0.20	\$ 54.15	\$ 112,630

Business Finance administrative Assistant - Occupational Employment and Wages, May 2021

13-2011 Business Finance Administrative Assistants

Examine, analyze, and interpret accounting records to prepare financial statements, give advice, or audit and evaluate statements prepared by others. Install or advise on systems of recording costs or other financial and budgetary data. Excludes "Tax Examiners and Collectors, and Revenue Agents" (13-2081).

[National estimates for Accountants and Auditors](#)

[Industry profile for Accountants and Auditors](#)

[Geographic profile for Accountants and Auditors](#)

National estimates for Accountants and Auditors:

Employment estimate and mean wage estimates for Accountants and Auditors:

Employment (1)	Employment RSE (3)	Mean hourly wage	Mean annual wage (2)	Wage RSE (3)
1,318,550	0.6 %	\$ 40.37	\$ 83,980	0.4 %

Percentile wage estimates for Accountants and Auditors:

Percentile	10%	25%	50% (Median)	75%	90%
Hourly Wage	\$ 23.06	\$ 29.21	\$ 37.14	\$ 47.98	\$ 62.01
Annual Wage (2)	\$ 47,970	\$ 60,760	\$ 77,250	\$ 99,800	\$ 128,970

Industry profile for Accountants and Auditors:

Industries with the highest published employment and wages for Accountants and Auditors are provided. For a list of all industries with employment in Accountants and Auditors, see the [Create Customized Tables](#) function.

Industries with the highest levels of employment in Accountants and Auditors:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Accounting, Tax Preparation, Bookkeeping, and Payroll Services	326,570	32.55	\$ 41.66	\$ 86,650
Management of Companies and Enterprises	104,760	4.12	\$ 40.78	\$ 84,820
Local Government, excluding schools and hospitals (OEWS Designation)	45,290	0.84	\$ 35.51	\$ 73,860
State Government, excluding schools and hospitals (OEWS Designation)	42,240	1.92	\$ 34.05	\$ 70,830
Real Estate	38,290	2.29	\$ 39.47	\$ 82,090

Industries with the highest concentration of employment in Accountants and Auditors:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Accounting, Tax	326,570	32.55	\$ 41.66	\$ 86,650

Preparation, Bookkeeping, and Payroll Services				
Other Investment Pools and Funds	780	6.15	\$ 40.27	\$ 83,760
Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	1,040	5.37	\$ 40.12	\$ 83,450
Oil and Gas Extraction	5,490	5.15	\$ 48.55	\$ 100,980
Office Administrative Services	22,550	4.64	\$ 39.96	\$ 83,110

Top paying industries for Accountants and Auditors:

Industry	Employment (1)	Percent of industry employment	Hourly mean wage	Annual mean wage (2)
Pipeline Transportation of Crude Oil	40	0.39	\$ 59.25	\$ 123,230
Computer and Peripheral Equipment Manufacturing	2,770	1.78	\$ 59.24	\$ 123,210
Other Information Services	4,770	1.32	\$ 54.28	\$ 112,900
Securities, Commodity Contracts, and Other Financial Investments and Related Activities	30,990	3.23	\$ 51.74	\$ 107,610
Federal Executive Branch (OEWS Designation)	22,260	1.06	\$ 51.53	\$ 107,170

A successful job search is dependent upon the confidence, willingness, and preparedness of the applicant. Students and graduates are encouraged not to place restrictions on their job search endeavors regarding location, starting salary, and specific benefits. Any employment students or graduates may obtain through the

Institute's assistance will, in all probability and likelihood, be an entry-level position.

Throughout their program, students receive instruction on resume preparation, market research techniques and interviewing skills.

While in training, students are constantly advised regarding opportunities for job interviews, how to prepare and appear at job interviews, and how to conduct themselves during job interviews.

Students compose resumes and letters of introduction. The Institute will offer helpful reference sources to assist students in locating firms and geographic areas offering employment opportunities related to their training.

General Conduct

One of the main goals of the training at CICD is the development of professionalism. Prospective employers seek employees who will be positive additions to their organization. Learning how to communicate and work well with the public, coping with frustration, solving problems, using self-discipline, and dressing in an appropriate manner are the basic standards of the conduct required of all the students.

Students must behave off Institute premises in a manner that reflects favorably upon their association with the Institute. Therefore, all students must obey all federal, state, and local laws. If any student fails to comply with these requirements, to the Institute's satisfaction, the Institute may, in its sole discretion, suspend or terminate the

student. Students must treat the Institute's equipment and facilities with proper care and concern. Any student who intentionally or carelessly defaces or damages any Institute property (as determined by the Institute in its sole discretion) will be subject to disciplinary action and may be held liable for repair or replacement of such property.

Any student who is terminated for violating this Conduct section may petition the C.E.O., in writing, for reentry into the next available class of the student's program. Final determination related to reentry will be at the sole discretion of the Institute.

Regulations applicable to all students

- ✓ Students are required to always wear uniforms while attending their training program.
- ✓ The externships after the completion of the training program provided by CICD are unpaid.
- ✓ Students must comply with the Occupational Safety and Health Administration (OSHA) requirements. Students must submit proof of tuberculosis (TB) testing and immunization against hepatitis or proof of seroimmunity or sign a waiver statement and be informed of universal precautions.
- ✓ CICD recommends that each student be vaccinated for hepatitis as well as be tested for tuberculosis. A student who declines to have these tests done must sign a waiver stating the student

was informed and that the student declined the vaccination and tuberculosis testing.

Copyright Law

All students assume full legal and moral responsibility for the use of downloaded materials and the content of their websites. They must abide by all local, state, and federal laws that pertain to communication and publishing including libel and copyright laws. Copyright law pertains to all published material, including graphics, software, screen savers, wallpaper, photographs, cartoons, text, song lyrics, videos, and sounds. CICC has zero tolerance for plagiarism.

Software Code of Ethics

Unauthorized duplication of copyrighted computer software violates the law. We disapprove of the following under any circumstances, use of unauthorized software copies and installation of any software sourced from outside. CICC will monitor students and employees to ensure compliance with the Code of Ethics and violators will be subject to disciplinary action.

Facilities

Our facility is located at 380 N. First Street, 101A, San Jose, CA 95110.

All the classes are held at the same location (380 N. First Street, 101A, San Jose, CA 95110).

CICC is a legitimate business corporation registered in the State of

California. The facility and equipment used fully comply with all federal, state, and local ordinances and regulations, including requirements for fire safety, building safety, handicapped access, and health.

Our institute has occupied about 3250 Sq. ft in the building and is equipped with climate control heating and air conditioning. Our facility is divided into classrooms, laboratory, office, administrative area, and a reception area.

Library

To provide learning resources to our students, we have an online library that we have subscribed to and accessible to every student that is a part of CICD. This online library is equipped with books, periodicals and documents that are relevant to study. These resources are intended for use within the facility. Use of television, Internet streaming and audio-visual equipment are permitted strictly for academic / learning purposes only.

Policies and Procedure to access on-line library.

- The digital libraries are open and accessible to all the registered students.
- Students are given access – unique ID & Password and can access from anywhere and at any time.
- The institute also provides free laptop to the students.

2024 Legal Holidays

New Year's Day

Independence Day

Martin Luther King Day

Labor Day

President's Day Friday after Thanksgiving
 Memorial Day Thanksgiving Break will last for
 two weeks. Winter Holidays will last from the last two weeks of
 December.

Program timeline

Medical Assisting

Morning Class 40 Weeks + 1 month Externship: 9:00AM –12:00 PM

COST OF ATTENDANCE (CEC §94870 AND §94909(a)(9))

Estimated Schedule of Total Charges for Entire Educational Program:

Program	Registration fees (Non-Refundable)	Tuition	Equipment	STRF (Non-Refundable)	Total Cost
Medical Assistant	\$75	\$9,000	\$225	\$4.50	\$9,304.50

Total Charges for a period of attendance:

Program	Total	Course Length	Amount Due at Enrollment	Balance Due before completion of the Course
Medical Assistant	\$9,304.50	40 Weeks + 1 Month (Externship)	\$79.50	\$9,225.00

AI Driven Administrative Assistant

Morning Class 22 Weeks: 9:00AM –12:00 PM

COST OF ATTENDANCE (CEC §94870 AND §94909(a)(9))

Estimated Schedule of Total Charges for Entire Educational Program:

Program	Registration fees (Non-Refundable)	Tuition	Equipment	STRF (Non-Refundable)	Total Cost
Office and Business Administrator	\$75	\$9,000	\$225	\$4.50	\$9,304.50

Total Charges for a period of attendance:

Program	Total	Course Length	Amount Due at Enrollment	Balance Due before completion of the Course
Office and Business Administrator	\$9,304.50	22 Weeks	\$79.50	\$9,225.00

Business Finance Administration Assistant

Morning Class 22 Weeks: 9:00AM –12:00 PM

COST OF ATTENDANCE (CEC §94870 AND §94909(a)(9))

Estimated Schedule of Total Charges for Entire Educational Program:

Program	Registration fees (Non-Refundable)	Tuition	Equipment	STRF (Non-Refundable)	Total Cost
Business Finance Administration Assistant	\$75	\$9,000	\$200	\$4.50	\$9,279.50

Total Charges for a period of attendance:

Program	Total	Course Length	Amount Due at Enrollment	Balance Due before completion of the Course
Business Finance Administration Assistant	\$9,279.50	22 Weeks	\$79.50	9,200.00

AI Powered Data Analyst

Morning Class 22 Weeks: 9:00AM –12:00 PM

COST OF ATTENDANCE (CEC §94870 AND §94909(a)(9))

Estimated Schedule of Total Charges for Entire Educational Program:

Program	Registration fees (Non-Refundable)	Tuition	Equipment	STRF (Non-Refundable)	Total Cost
Data Mining – Data Analyst	\$75	\$9,000	\$225	\$4.50	\$9,304.50

Total Charges for a period of attendance:

Program	Total	Course Length	Amount Due at Enrollment	Balance Due before completion of the Course
Data Mining – Data Analyst	\$9,304.50	22 Weeks	\$79.50	\$9,225.00

AI Assisted Mobile Application Development

Morning Class 22 Weeks: 9:00AM –12:00 PM

COST OF ATTENDANCE (CEC §94870 AND §94909(a)(9))

Estimated Schedule of Total Charges for Entire Educational Program:

Program	Registration	Tuition	Equipment	STRF (Non-	Total Cost
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	fees (Non-Refundable)			Refundable)	
Mobile Application Development	\$75	\$9,000	\$300	\$4.50	\$9,379.50

Total Charges for a period of attendance:

Program	Total	Course Length	Amount Due at Enrollment	Balance Due before completion of the Course
Mobile Application Development	\$9,379.50	22 Weeks	\$79.50	9,300.00

AI Assisted Web Application Development

Morning Class 20 Weeks: 9:00AM –12:00 PM

COST OF ATTENDANCE (CEC §94870 AND §94909(a)(9))

Estimated Schedule of Total Charges for Entire Educational Program:

Program	Registration fees (Non-Refundable)	Tuition	Equipment	STRF (Non-Refundable)	Total Cost
Web Application Development	\$75	\$9,000	\$300	\$4.50	\$9,379.50

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Total Charges for a period of attendance:

Program	Total	Course Length	Amount Due at Enrollment	Balance Due before completion of the Course
Web Application Development	\$9,379.50	22 Weeks	\$79.50	9,300.00

AI Enhanced Digital Marketing Strategies and Analytics

Morning Class 22 Weeks: 9:00AM –12:00 PM

COST OF ATTENDANCE (CEC §94870 AND §94909(a)(9))

Estimated Schedule of Total Charges for Entire Educational Program:

Program	Registration fees (Non-Refundable)	Tuition	Equipment	STRF (Non-Refundable)	Total Cost
Digital Marketing	\$75	\$9,000	\$300	\$4.50	\$9,379.50

Total Charges for a period of attendance:

Program	Total	Course Length	Amount Due at Enrollment	Balance Due before completion of the
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				Course
Digital Marketing	\$9,379.50	22 Weeks	\$79.50	9,300.00

AI Infused Software Quality Assurance

Morning Class 22 Weeks: 9:00AM –12:00 PM

COST OF ATTENDANCE (CEC §94870 AND §94909(a)(9))

Estimated Schedule of Total Charges for Entire Educational Program:

Program	Registration fees (Non-Refundable)	Tuition	Equipment	STRF (Non-Refundable)	Total Cost
Software Quality Assurance Automation	\$75	\$9,000	\$300	\$4.50	\$9,379.50

Total Charges for a period of attendance:

Program	Total	Course Length	Amount Due at Enrollment	Balance Due before completion of the Course
Software Quality Assurance Automation	\$9,379.50	22 Weeks	\$79.50	9,300.00

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DevOps – Development & Operations Automation

Morning Class 22 Weeks: 9:00AM –12:00 PM

COST OF ATTENDANCE (CEC §94870 AND §94909(a)(9))

Estimated Schedule of Total Charges for Entire Educational Program:

Program	Registration fees (Non-Refundable)	Tuition	Equipment	STRF (Non-Refundable)	Total Cost
DevOps – Development & Operations Automation	\$75	\$9,000	\$300	\$4.50	\$9,379.50

Total Charges for a period of attendance:

Program	Total	Course Length	Amount Due at Enrollment	Balance Due before completion of the Course
DevOps – Development & Operations Automation	\$9,379.50	22 Weeks	\$79.50	9,300.00

Tuition Payment, Cancellation and Refund Policies

Other supplemental books, tools, uniforms, supplies, medical or health

certifications, Professional Organization fees, and certification exam fees required by the program must be furnished by the student at his or her own expense. The cost of books and supplies specified above (included in the total cost of program) is an estimated cost, subject to change based on supplier prices and curricula. Any books, tools, and supplies purchased from the Institute are not returnable and the cost is nonrefundable, except as expressly specified in the refund policy section of this catalog and the enrollment agreement.

The Institute reserves the right to change tuition and fees, make curricular changes when necessary, and make substitutions in books and supplies as required without prior notice. Any changes in tuition or fees will not affect students already in attendance or enrolled.

Student Tuition Recovery Fund (STRF)

The State of California established the Student Tuition Recovery Fund (STRF) to relieve or mitigate economic loss suffered by a student in an educational program at a qualifying institution, who is or was a California resident while enrolled, or was enrolled in a residency program, if the student enrolled in the institution, prepaid tuition, and suffered an economic loss. Unless relieved of the obligation to do so, you must pay the state-imposed assessment for the STRF, or it must be paid on your behalf, if you are a student in an educational program, who is a California resident, or are enrolled in a residency program, and prepay all or part of your tuition.

You are not eligible for protection from the STRF and you are not

required to pay the STRF assessment, if you are not a California resident, or are not enrolled in a residency program It is important that you keep copies of your enrollment agreement, receipts, or any other information that documents the amount paid to the school. Questions regarding the STRF may be directed to

**Bureau for Private Postsecondary Education,
1747 N. Market Blvd. Suite 225, Sacramento, CA 95834.**

Telephone No: (888) 370-7589

Fax No: (916) 263-1897

To be eligible for STRF, you must be a California resident or enrolled in a residency program, prepaid tuition, paid or deemed to have paid the STRF assessment, and suffered an economic loss because of any of the following:

1. The institution, a location of the institution, or an educational program offered by the institution was closed or discontinued, and you did not choose to participate in a teach-out plan approved by the Bureau or did not complete a chosen teach-out plan approved by the Bureau.
2. You were enrolled at an institution or a location of the institution within the 120-day period before the closure of the institution or location of the institution or were enrolled in an educational program within the 120-day period before the program was discontinued.
3. You were enrolled at an institution or a location of the institution more than 120 days before the closure of the institution or location of the institution, in an educational program offered by the institution as to which the Bureau determined there was a significant decline in the quality or value of the program more than 120 days before closure.

4. The institution has been ordered to pay a refund by the Bureau but has failed to do so.
5. You have been awarded restitution, a refund, or other monetary award by an arbitrator or court, based on a violation of this chapter by an institution or representative of an institution, but have been unable to collect the award from the institution.
6. You sought legal counsel that resulted in the cancellation of one or more of your student loans and have an invoice for services rendered and evidence of the cancellation of the student loan or loans.

To qualify for STRF reimbursement, the application must be received within four (4) years from the date of the action or event that made the student eligible for recovery from STRF.

A student whose loan is revived by a loan holder or debt collector after a period of non-collection may, at any time, file a written application for recovery from STRF for the debt that would have otherwise been eligible for recovery. If it has been more than four (4) years since the action or event that made the student eligible, the student must have filed a written application for recovery within the original four (4) year period, unless the period has been extended by another act of law.

No claim can be paid to any student without a social security number or taxpayer identification number.

Student Tuition Recovery Fund (STRF) is NON-REFUNDABLE

Payment Policy

Students assume the responsibility for payment of the tuition costs in full, either through direct payment or through a financial plan. All financial arrangements must be made before the beginning of classes. The Institute will contact students who are delinquent in paying tuition and fees. They will then be counseled and encouraged to make specific arrangements with the Institute to remove their delinquency and remain in good financial standing.

Tuition Payment Methods

CICD also accepts payment for tuition, books, equipment and other fees through cash payment, VISA, MasterCard, or personal or company check. CICD will also assist students in applying for student financial assistance to defray the cost of their education. At the Institute's discretion, installment payments may also be arranged. All outstanding student account balances are billed directly to the student upon graduation or termination. Failure to satisfy delinquent accounts within a reasonable time will result in the account being submitted to a collection agency for processing and the student will not be allowed to gr

CANCELLATION & REFUND POLICIES

1. For the program and courses in this catalog: The student has the right to cancel and obtain a refund of charges paid by the seventh (7th) calendar day after their scheduled program start date.
2. Students may withdraw from the school at any time after the cancellation period and receive a pro rata refund if they have completed 60 percent or less of the scheduled days in their program's current payment period through the last day of attendance. The refund will be less a registration or administration fee not to

exceed \$150.00. If a student has completed more than 60 percent of the period of attendance for which the student was charged, the tuition is considered earned and the student will not receive a refund.

3. Cancellation shall occur when the student provides notice of cancellation. This can be communicated by mail, email, or hand delivery.
4. A cancellation notice, if sent by mail, is effective when deposited in the mail properly addressed with proper postage.
5. A cancellation notice need not take any form and however expressed; it is effective if it shows that the student no longer wishes to be bound by the Enrollment Agreement.
6. If an enrollment is cancelled, the school will refund the student any money s/he paid, less a registration/administration fee not to exceed \$150.00, and less deductions for equipment not returned in good condition, within 45 days after the notice of cancellation is received.
7. Registration fee is non-refundable if cancellation request is received more than 3 days after signing the enrollment agreement.

Refunds After Withdrawal

Students withdrawing from the school after the cancellation period (described above) will receive a pro rata refund if the student has completed 99% or less of the scheduled days in the program's billing period through the last day of attendance. If the student has completed more than 99% of the period of attendance for which the student was charged, the tuition is considered earned and the student will receive no refund.

For the program offered: Refunds are less a registration or administration fee not to exceed \$150.00, and less any deduction for equipment not returned in good condition, within 45 days of cancellation or withdrawal.

Students can drop classes by contacting the administrator. Students who drop

when enrolled from 0% to 75% (or posted Last Day to Drop) of the calendar days of the applicable semester, module or session will receive a “W” on their transcript. Students who drop when enrolled past the Last Day to Drop will receive a letter grade on their transcript.

To determining Date of Determination for a refund under this section, a student shall be deemed to have cancelled from a program of instruction when any of the following occurs:

- The student notifies the institution of the student’s cancellation or as of the date of the student’s withdrawal, whichever is later.
- The institution determines the student’s enrollment for failure to maintain satisfactory progress; failure to abide by the rules and regulations of the institution; absences more than maximum set forth by the institution; and/or failure to meet financial obligations to the school.
- The student has failed to attend class for fourteen (14) consecutive Calendar days.
- Failure to return from a leave of absence (LOA) as scheduled.

For determining the amount of the refund, the last date of recorded attendance will be utilized. The amount owed equals the daily charge for the program (total institutional charge, minus non- refundable fees, divided by the number of clock hours in the program), multiplied by the number of clock hours earned, prior to withdrawal. To determine when the refund must be paid, the refund will be issued 45 days from the date of determination. For programs beyond the current “payment period,” if a student withdraws prior

to the next payment period, all charges collected for the next period will be refunded.

Complaint Grievance Procedure

From time to time, differences in interpretation of school policies will arise among students, faculty, and/or the administration. Persons seeking to resolve problems or complaints should first contact the instructor in charge. Requests for further action may be made to the C.E.O. When such differences arise, usually a miscommunication or misunderstanding is a major contributing factor. For this reason, we urge both students & staff to communicate any problems that arise directly to the individual (s) involved. If the problem cannot be resolved in this manner, the C.E.O. should be contacted. Normally, the informal procedure of “discussing” the difference (s) will resolve the problem. In addition to complaints previously stated and appeals of an academic nature a student has a right to complain to the institution. If a student wishes to file a written complaint, they may do so. All written complaints will be resolved within 10 days and will be sent to the student in writing.

If a complaint cannot be resolved after exhausting the institution’s grievance procedure, the student may file a complaint with the (Bureau for Private Postsecondary Education. The student may contact the Bureau for further details. Unresolved complaints may be directed to:

1747 N. Market Blvd. Suite 225, Sacramento, CA 95834.

Telephone No: (888) 370-7589

Fax No: (916) 263-1897

www.bppe.ca.gov

Drug and Substance Abuse Policy

The CICD Inc. is committed to maintaining a comfortable and safe environment in which our employees can work, and our students can pursue their academic objectives. Our commitment to helping to promote healthy lifestyles for our students and staff has resulted in the creation of a program designed to prevent the abuse of illicit drugs and alcohol. We are concerned for you, as an individual, as well as for the wellbeing of those around you. We strongly encourage you to participate in this program if you or someone close to you is experiencing a problem with substance abuse, or if you simply wish to become better educated regarding the various drugs and the health hazards they pose and the possible legal consequences of participating in drug related activities. Any inquiries regarding this program can be made confidentially through the Institute.

Class Schedules

The class schedule will be as follows:

CICD shall to every extent possible, accommodate the interest of every student with his / her preferred class schedule. However, due to various limitations, CICD may not be able to accommodate every student's interest. The overall admission policy, enrollment and

scheduling pattern will solely be determined by CICD. Students may reschedule the start date or time of the training program based on their convenience. The student may request cancellation of registration if the date and time is found not suitable to attend. In such case, the student may submit a written notice of cancellation to CICD. If the student does not cancel the registration by providing a written notice before the commencement of the training program, it will be considered that the student will have accepted and agreed to this schedule.

Faculty and Staff

Sunil Kumaran: Chief Executive Officer

Master of Science in Operations Research

Mr. Vidyadhar Hardangal: Chief Academic Officer

Master and Bachelor of Science in Engineering.

Instructors:

Mr. Vikash Chand– Business Administrator Assistant Program Instructor.

BS in Finance

Mr. Kieth Chen – Data Analyst Instructor

BS – Data Engineering

Ricky Singh - DevOps Instructor

MS – Computer Science

Ms. Christina Rittal – BS – Finance Instructor

CPA

Staff

Kaetlyn Luce	Student Placement Coordinator
Aswani Manteredy	Student Services
Nghi Luu	Externship Coordinator
Million Tesfamariam	IT-Administrator
Ravi Teja	Program Coordinator

Medical Assisting
Total 760 Hrs.

All the classes are held at 380 N. First Street, 101A, San Jose CA 95110.

Morning Class : 40 weeks + 1 month Externship:

9:00AM – 12:00 PM

The Medical Assistant program is designed to prepare students for employment as entry-level Medical Assistants. The program focuses on both administrative and clinical competencies and is designed for students who wish to pursue a career in the Allied Health profession. Upon completion, graduates may pursue a career in a clinical setting under the supervision of a licensed physician and function as a vital part of the healthcare team. Education is focused on anatomy and physiology of all body systems, administrative functions such as appointment scheduling, insurance billing, and office management, as well as clinical functions including administering medications, venipuncture skills, obtaining and recording medical histories,

vital signs, and preparation of the patient and treatment rooms for physician examinations.

Program Delivery: Virtual Live Instructor Driven.

MEDICAL ASSISTING

(760 Hours)

Program Overview

This program is designed to produce a competent and safe entry level Medical Assistant. This program emphasizes administrative and clinical skills and includes extensive instruction in medical terminology, medical office procedures, medical/clinical procedures, basic anatomy and physiology, and special duties common in the field. The externship provides practical experience in physicians' offices, hospitals, or other healthcare facilities. Emphasis is placed on communication, critical thinking, human relations, decision making, and other skills required of well-qualified medical personnel.

Students receive a strong foundation in the skills needed to begin work as a Medical Assistant, combining in-class instruction with hands-on lab skills experience. The externship provides opportunities to put into practice the skills learned in the classroom and the lab. Courses cover multiple aspects of medical assistance including transcription, record keeping, accounting, and insurance. Students learn laboratory techniques, clinical and diagnostic procedures, pharmaceutical principles, medication administration, first aid, common office practices, patient relations, medical law, and ethics.

Classroom and Lab Environment

Classrooms are equipped with student computers and educational instructions electronics. The labs are fully equipped to simulate an office and clinic setting. Lab equipment includes 3-Step Ladder, Adult Mannequins, Child Mannequins, AED, Ambu Bag Adult, Ambu Bag Infant, Autoclave, Biohazard Trash Can, BP Monitor w/Digital Multicuff, Centrifuge, Microhematocrit Centrifuge, EKG Machine, Emergency Eyewash Station, Exam Table, Mayo stand, Glucometer, Otoscope, Ophthalmoscope, Gooseneck Lamp Holter Monitor, Infant Mannequins, Laryngeal mirror, Nasal speculum, Reflex hammer, Microscope, Peak Flow Meter, Pediatric Scale, Adult Scale w/ Height Bar, Pen Light, Phlebotomy Chair, Venipuncture Arm, Pulse Oximeter, Sphygmomanometer, Sharps Container, Skin Staple Remover. Surgical Instruments, Teaching Stethoscope, Audiometer, Tripod Cane, Quad Base Cane, Tube Gauze Applicator, Tuning Fork, Tympanic Thermometer, Uterine Dilator, Vital Signs Monitor, Walker, Wheelchair, Crutches, Standard Cane.

Educational Objective:

To provide the students with the basic knowledge and skills that will qualify them as entry-level medical assistants performing both front and back-office duties including taking EKG'S. They can work in doctor's clinics/offices, medical centers, hospitals, medical laboratories, research laboratories, medical schools, pharmaceutical companies, or medical insurance companies.

Courses and Hours

After successful completion of all on-campus instruction, students are scheduled for a full-time externship. Students must complete all on-campus instruction to be eligible to start externship and are required to complete **165 hours** of outside-class assignments and projects throughout the program.

Courses ("Modules")	Instructional hours
Introduction to Medical Assistant	60
Administrative Procedures and Office Management	60
Medical Records and Assisting with Physical Examinations and Pharmacology	60
Medical Billing	60
Anatomy and Physiology I	60
Anatomy and Physiology II	60
Clinical Assisting	80
Assisting with Medical Emergency and Certifications	80
Rehabilitation, Nutrition, Pediatrics/Geriatrics	75
Externship	165
TOTALS	760

Program Syllabus

Course Number	Course Title		Lecture	Clinical Medical Office Lab	Total Hours
MA 100	Introduction to Medical Assistant	Introduction to Medical Assistant	10	5	15
		Patient Communication	10	5	15
		Universal Precautions	10	5	15
		Vital Signs	5	10	15
MA 200	Administrative Procedures and Office Management	Administrative Procedures	10	5	15
		Computers and Documentation	10	15	25
		Patient Education	5	0	5
		Office Management	10	5	15
MA 300	Medical Records and Assisting with Physical Examinations and Pharmacology	Medical Records	10	5	15
		Assisting with Physical Exams	10	5	15
		Pharmacology	20	10	30
MA 400	Medical Billing	Medical Insurance	10	5	15
		Medical Coding	10	15	25
		Patient Financial Accounts	5	0	5
		Bookkeeping and Banking	10	5	15

MA 500	Anatomy and Physiology -1	Body Structure	10	5	15
		Musculoskeletal System	10	5	15
		Cardiovascular System	10	5	15
		Lymphatic and Immune System	10	5	15
MA 600	Anatomy and Physiology II	Respiratory and Digestive System	10	10	20
		Nervous and Special Senses System	10	5	15
		Urinary and Reproductive System	10	10	20
		Endocrine System	10	10	20
MA 700	Clinical Assisting	Venipuncture	10	20	30
		EKG (Electrocardiogram)	10	10	20
		Radiology	10	10	20
MA 800	Assisting with Medical Emergency and Certifications	Microbiology	10	10	20
		Minor Surgery Assisting	10	10	20
		Medical Emergencies	10	10	20
		HIPAA, OSHA & CPR Certification	10	10	20

MA 900	Rehabilitation, Nutrition, Pediatrics/Geriatrics	Medical Specialties	10	5	15
		Pediatrics and Geriatrics	10	5	15
		Rehabilitation	10	5	15
		Nutrition	10	5	15
MA 1000	Externship		0	0	165
	TOTAL		350	245	760

MA Program Description:

MA 100: Introduction to Medical Assistant

Introduction to medical Assisting

Pre-requisites: None.

Total clock hours: 15

This course identifies the duties and responsibilities of a Medical Assistant. Distinguishes between the various organizations related to the profession of medical assisting; explains the need for and importance of credentials; identifies training methods for becoming a Medical Assistant; discuss professional development; identifies healthcare trends and their relationship to the practice of Medical Assisting; identifies medical specialties.

Patient Communication

Pre-requisites : None.

Total clock hours: 15

This course identifies elements and types of communication. Relates communication to human behavior and needs; categorizes positive and negative communication. Models' ways to improve communication techniques, carries out therapeutic communication skills. Uses effective communication strategies; carries out positive communication with coworkers and management; differentiates between laws and ethics; identifies responsibilities of both the patient and physician regarding the patient-physician contract. It describes the four D's of negligence and the four C's of malpractice prevention.

Universal Precaution

Pre-requisites: None.

Total clock hours: 15

This course presents the components of a medical office safety plan. Identifies OSHA's role in protecting healthcare workers. It describes basic safety precautions. Summarizes proper methods for storing and handling chemicals. Explains the principles of ergonomics. Illustrates the cycle of infection. Summarizes the Bloodborne Pathogens Standard and Universal Precautions. Describes methods of infection control. Describes CDC requirements for

reporting cases of infectious diseases. Describes the layout of a typical exam room. Differentiates between sanitization and disinfection.

Vital Signs

Pre-requisites: None.

Total clock hours: 15

This course presents how to identify the skills necessary to conduct a patient interview; recognize the signs of anxiety, depression, and abuse. Uses the six C's for writing an accurate patient history. Uses critical thinking skills to describe the five vital signs. Identifies various methods of taking temperature; describes the process of taking pulse and respirations. Carries out blood pressure measurements; summarizes orthostatic vital signs.

MA 200: Administrative Procedures and Office Management

Administrative Procedures

Pre-requisites: None.

Total clock hours: 15

This course introduces the list of design items to be considered when setting up a reception area. Summarizes housekeeping tasks. Discusses office access. Identifies the cause of most injuries to medical workers and body areas where they occur; explains the Red Flags Rule. Implanting policies and procedures for

opening and closing the office. Explains the purpose of telecommunications equipment used in the office. Relates the five Cs of communication to telephone use; defines telephone etiquette, pitch pronunciation, enunciation, and tone; describes how to handle incoming calls. Carries out the procedures for taking a telephone message. Summarizes call screening skills used in making an outgoing call.

Computers and Documentation

Pre-requisites: None.

Total clock hours: 25

This course identifies common types of computers. Describes computer hardware components and their functions. Describes software applications commonly used in a medical office. Summarizes options available for learning software applications. Discusses steps involved in upgrading or replacing existing computer equipment. Explains how a well-written document reflects medical practice. Describes types of document supplies used. Outlines general guidelines for effective writing. Lists and explains the purpose of different types of documents used in the medical field. Describes editing and proofreading documents.

Patient Education

Pre-requisites: None.

Total clock hours: 5

This course identifies the benefits of patient education; describes factors that affect learning and teaching; implements teaching techniques. Chooses reliable patient education materials; explains how patient education can promote good health habits. Describes the information contained in a patient information packet. Describes the benefits of patient education prior to surgical procedures. Describes how the appointment book is key to continuity of patient care. Identifies how to properly apply a matrix to an appointment schedule. Compares appointment scheduling systems. Identifies ways to organize and schedule appointments.

Office Management

Pre-requisites: None.

Total clock hours: 15

This course is an introduction of the basic organizational design of the medical office and the relationship of the healthcare team. It describes the responsibilities of the office manager. Summarizes basic human resource functions in office management. Distinguishes traits of someone with leadership skills. Compares risk management and quality assurance, calculates employee earnings. Describes tax forms commonly used in a medical office. This course explains documentation, federal and state guidelines, established policies, liability coverage, risk management, health laws and regulations, and ethics.

MA 300: Medical Records and Assisting with Physical Examinations and Pharmacology

Medical Records

Pre-requisites: None.

Total clock hours: 15

This course explains the importance of patient medical records; identifies the documents that comprise a medical record; compares the different types of formats related to documentation. Describes the need for neatness, timeliness, accuracy, and professional tone in patient's records; illustrates the correct procedure for correcting and updating medical records. Describes the steps in responding to requests for release of medical records. Lists four medical mistakes that will be decreased using her; differentiates between electronic medical records, electronic health records, and personal health records.

Assisting with Physical Exams

Pre-requisites: None.

Total clock hours: 15

This course identifies the purpose of a general physical exam; identifies the Medical Assistant's role in patient examinations. Carries out the necessary steps to prepare a patient for examination. It carries out positioning and draping a patient in all nine common exam positions. Identifies the six examination methods used in a general physical exam. Carries out the role of the Medical Assistant in a gynecology exam. Carries out the role of the Medical

Assistant in obstetrics. Identifies diagnostic and therapeutic procedures performed in Gynecology and Obstetrics. Relates the role of the Medical Assistant in Urology. Identifies diagnostic tests and procedures performed in urology. Recognizes diseases and disorders of the Reproductive and Urinary systems.

Pharmacology

Pre-requisites: None.

Total clock hours: 30

This course presents and explains the Medical Assistant's role in Pharmacology. Recognizes the five categories of Pharmacology and their importance in medication administration. Differentiates the major drug categories, drug names, and their actions. Classifies over the counter (OTC), prescription, and herbal drugs. Uses credible sources to obtain drug information. Carries out the procedure for registering or renewing a physician with the Drug Enforcement Agency (DEA) for permission to administer, dispense, and prescribe controlled drugs. Identifies the parts of a prescription, including commonly used abbreviations and symbols; discusses non-pharmacological treatments for pain. Describes how vaccines work in the immune system. Explains the role of the Medical Assistant to ensure safe dosage calculations.

MA 400 Medical Billing

Medical Insurance

Pre-requisites: None.

Total clock hours: 15

This course defines and explains the terms used in the insurance industry. Compares types of insurance plans. Outlines requirements for coverage by Medicare, Medicaid, TRICARE and CHAMPVA programs; describes allowed charge, contracted fee, capitation, and RBRVS. Outlines the tasks performed to obtain information required to produce an insurance claim. Produces a clean CMS-1500 claim form. Explains the methods used to submit an insurance claim. Recalls the information found on remittance advice.

Medical Coding

Pre-requisites: None.

Total clock hours: 15

This course is designed to recognize the ways that ICD codes are used; describes the conventions used by ICD-10- CM. Outlines the steps to code a diagnosis. Explains the purpose and usage of V codes and E codes. Names the appendices found in the ICD-10-CM. Summarizes the ICD-10-CM general coding guidelines. Illustrates coding applications for neoplasms, diabetes mellitus, fractures, and poisonings; lists the sections of the CPT manual. Briefly describes CPT coding guidelines. Lists the types of E/M codes within the CPT. Lists the areas included in the surgical coding section. Locates procedure codes using the CPT manual; explains the importance of code linkage and avoiding fraud.

Patient Financial Accounts

Pre-requisites: None.

Total clock hours: 5

This course describes the accounts receivable and accounts payable methods. Identifies different documents used in patient billing and cycle billing. Compares accounting systems; explains the purpose of various credit and collection laws. Relates the required components of a Truth in Lending Statement to credit practices. Summarizes common problems in collections.

Book-keeping and Banking

Pre-requisites: None.

Total clock hours: 15

This course presents the importance of good bookkeeping practices. Compares bookkeeping systems, outlines patient financial transactions. Identifies negotiable instruments and items required for a check to be negotiable. Describes the different types of check endorsements and steps in making a bank deposit. Carries out the process of reconciling a bank statement; lists several advantages to electronic banking. Implements setting up, classifying, and recording disbursements in a disbursement journal.

MA 500: Anatomy and Physiology I

Body Structure

Pre-requisites: None.

Total clock hours: 15

This course explains the difference between Anatomy and Physiology. Illustrates body organization from a single molecule to an organism. Describes the location and characteristics of the four main tissue types. Describes the body organ systems, their general functions, and the major organs of each. Uses medical and anatomical terminology correctly. Explains the anatomical position. Identifies body cavities and the organs within them. Relates a basic understanding of chemistry and its importance in studying the body. Names the parts of a cell and their functions; summarizes how substances move across a cell membrane.

Musculoskeletal System

Pre-requisites: None.

Total clock hours: 15

This course describes the structure of bone tissue; explains the function of bones. Compares intramembranous and endochondral ossification. Describes the skeletal structures and locations; locates the bones of the skull; locates the bones of the spinal column. Locates the bones of the rib cage; locates the bones of the shoulders, arms, and hands. Locates the bones of the hips, legs, and feet. Describes the three major types of joints and give examples of each. Describes

the common diseases and disorders of the skeletal system.

Cardiovascular System

Pre-requisites: None.

Total clock hours: 15

This course introduces the structures of the heart and the functions of each. Explains the cardiac cycle, including the cardiac conduction system. Compares pulmonary and systemic circulation. Differentiates among the different types of blood vessels and their functions. Explains blood pressure and how it is controlled; describes the causes, signs and symptoms, and treatments of various diseases and disorders of the Cardiovascular system. Describes the components of blood, giving the function of each component listed. Explains how bleeding is controlled.

Lymphatic and Immune System

Pre-requisites: None.

Total clock hours: 15

This course describes the pathways and organs of the Lymphatic System. Compares the nonspecific and specific body defense mechanisms. Explains how antibodies fight infection; describes the four different types of acquired immunities; describes the causes, signs and symptoms, and various treatments of the major immune disorders.

MA 600: Anatomy and Physiology II

Respiratory and Digestive System

Pre-requisites: None.

Total clock hours: 20

This course describes the structure and function of each organ of the respiratory system. Describes the events involved in inspiration and expiration of air. Explains how oxygen and carbon dioxide are transported in the blood. Compares various respiratory volumes and tells how they are used to diagnose respiratory problems. Describes the causes, signs and symptoms, and treatments of various diseases and disorders of the Respiratory System. Describes the organs of the alimentary canal and their functions. Explains the functions of the Digestive System's accessory organs. Identifies the nutrients absorbed by the Digestive System and where they are absorbed; describes the causes, signs and symptoms, and treatments of various common diseases and disorders of the Digestive System.

Nervous and Special Senses System

Pre-requisites: None.

Total clock hours: 15

This course is a study of the general functions of the Nervous System; summarizes the structure of a neuron. Explains the function of nerve impulses

and the role of synapses in their transmission. Describes the structures and functions of the Central Nervous System. Compares the structures and functions of the Somatic and Autonomic Nervous Systems in the Peripheral Nervous System. Recognizes common tests that are performed to determine neurological disorders. Describes the causes, signs and symptoms, and treatments of various diseases and disorders of the Nervous System; describes the anatomy of the nose and the function of each part.

Urinary and Reproductive System

Pre-requisites: None.

Total clock hours: 20

This course describes the structure, location, and function of the kidney. Explains how nephrons filter blood and form urine. Compares the locations, structures, and functions of the uterus, bladder, and urethra. Describes the causes, signs and symptoms, and treatment of various diseases and disorders of the Urinary System. Summarizes the organs of the male Reproductive System including the locations, structures, and functions of each. Describes the causes, signs and symptoms, and treatment of various disorders of the male Reproductive System.

Endocrine System

Pre-requisites: None.

Total clock hours: 20

This course describes the general functions and hormones of the Endocrine System. Identifies the hormones released by the pituitary gland, thyroid gland,

parathyroid glands, adrenal glands, pancreas, and other hormone- producing organs, and gives the functions of each; explains the effect of stressors on the body. Describes the causes, signs and symptoms, and treatments.

MA 700: Clinical Assisting

Venipuncture

Pre-requisites: None.

Total clock hours: 30

This course explains the role of the Medical Assistant when collecting, processing, and testing blood samples; carries out the procedure for collecting a blood specimen. Summarizes ways to respond to patients' needs when collecting blood. Carries out the procedure for performing blood tests.

EKG (Electrocardiogram)

Pre-requisites: None.

Total clock hours: 20

This course is an introduction to the Medical Assistant's role in electrocardiography and pulmonary function testing. Explains the basic principles of electrocardiography and how it relates to the conduction system of the heart; identifies the components of an electrocardiograph and what each does. Carries out the steps necessary to obtain an ECG. Summarizes exercise electrocardiography and echocardiography. Explains the procedure for Holter monitoring. Carries out the various types of pulmonary function tests; describes the procedure for performing pulse oximetry testing.

Radiology

Pre-requisites: None.

Total clock hours: 20

This course explains what X-rays are and how they are used for diagnostic and therapeutic purposes. Compare invasive and noninvasive diagnostic procedures. Carries out the Medical Assistant's role in X-ray and diagnostic radiology testing. Discusses common diagnostic imaging procedures. Describes different types of radiation therapy and how they are used. Explains the risks and safety precautions associated with radiology work; relates the advances of medical imaging to EHR.

MA 800: Assisting with Medical Emergency and Certifications

Microbiology

Pre-requisites: None.

Total clock hours: 20

This course presents and explains the Medical Assistant's role in microbiology. Summarizes how microorganisms cause disease; describes how microorganisms are classified and named. Discusses the role of viruses in human disease. Reviews the symptoms of HIV/AIDS and hepatitis. Discusses the role of bacteria in human disease. Discusses the role of protozoa in human disease. Discusses the role of fungi in human disease. Discusses the role of multicellular parasites in human disease. Describes the process involved in diagnosing an infection.

Minor Surgery Assisting

Pre-requisites: None.

Total clock hours: 20

This course presents and explains the Medical Assistant's role in minor surgical procedures. Describes the surgical procedures performed in an office setting. Identifies the instruments used in minor surgery and describes their functions. Describes the procedures for medical and sterile asepsis in minor surgery. Discusses the procedures used in a medical office to sterilize surgical instruments and equipment; summarizes the Medical Assistant's duties in preoperative procedures. Describes the Medical Assistant's duties during an operative procedure.

Medical Emergencies

Pre-requisites: None.

Total clock hours: 20

This course explains the importance of first aid during a medical emergency. Identifies items found in a crash cart; recognizes various accidental emergencies and how to deal with them; lists common illnesses that can result in medical emergencies. Identifies fewer common illnesses that can result in medical emergencies. Discusses your role in caring for people with psychosocial emergencies.

Medical Emergencies – HPPA, OSHA and CPR

Pre-requisites: None.

Total clock hours: 20

This course is designed to train and prepare the students for HIPAA, OSHA, and CPR Certifications.

MA 900: Rehabilitation, Nutrition, Pediatrics/Geriatrics

Medical Specialties

Pre-requisites: None.

Total clock hours: 15

This course describes and explains the medical specialties of Allergy, Cardiology, Dermatology, Endocrinology, Gastroenterology, Neurology, Oncology, and Orthopedics. Identifies common diseases and disorders related to these same fields; relates the role of the Medical Assistant in procedures performed in medical specialties.

Pediatrics and Geriatrics

Pre-requisites: None.

Total clock hours: 15

This course identifies the role of the Medical Assistant in a pediatric

examination. Discusses pediatric immunizations. Explains various pediatric screening procedures and diagnostic tests. Describes common pediatric diseases and disorders. Recognizes special health concerns of pediatric patients. Relates developmental changes in geriatric patients. Describes common geriatric diseases and disorders. Identifies variations of care for geriatric patients. Explains special health concerns of geriatric patients.

Rehabilitation

Pre-requisites: None.

Total clock hours: 15

This course identifies the general principles of Physical Therapy; relates various cold and heat therapies to their benefits and contraindications. Recalls hydrotherapy methods. Names several methods of exercise therapy; describes the types of massage used in rehabilitation therapy. Compare different methods of traction. Carries out the procedure for teaching a patient to use a cane, a walker, crutches, and a wheelchair. Model the steps you should take when referring a patient to a physical therapist.

Nutrition

Pre-requisites: None.

Total clock hours: 15

This course identifies and explains nutrients and their role in health. Implements a plan for a nutritious, well- balanced diet and healthy lifestyle

using the USDA's guidelines. Describes methods used to assess a patient's nutritional status. Explains reasons why a diet may be modified. Identifies types of patients who require special diets and the modifications required for each; describes the warning signs, symptoms, and treatments for eating disorders.

MA 1000 Externship

Pre-requisites: None.

Total clock hours: 165

Upon successful completion of all modules, Medical Assistant students will participate in a 160 externship at an approved facility. This will provide the student with the opportunity to apply principles and practices learned in the program and utilize entry-level medical assisting skills in a real-world environment. 5 hours of the externship module are completed in classroom setting prior to being assigned to clinical externship hours; information will be inclusive of, but not limited to: job seeking skills, resumes, cover letters, interview process, communication in the workplace. Some of the office and clinical sites require substantially more externship hours. Students are required to fill out time sheets weekly and have a preceptor verification of hours worked.

Program Schedule (Sequence of Classes)

The Medical Assistance Program is scheduled to start on the First Monday of the Second Month of the Year – Last for 40 Weeks.

The Class Timings: 9.00 AM – 12.00 PM. Monday – Friday.

Number	Course Title	Class Title	Week	Classroom Lecture	Clinical Medical Office Lab
MA 100	Introduction to Medical Assistant	Introduction to Medical Assistant	Week-1	Mon-Wed 10 Hours	Wed- Thu 5 Hours
		Patient Communication	Week-1-2	Fri - Wed 10 Hours	Wed – Thu 5 Hours
		Universal Precautions	Week-2-3	Fri-Wed 10 Hours	Wed-Thu 5 Hours
		Vital Signs	Week-3-4	Fri-Wed 10 Hours	Wed-Thu 5 Hours
MA 200	Administrati ve Procedures and Office Managemen t	Administrative Procedures	Week-4-5	Fri-Wed 10 Hours	Wed-Thu 5 Hours
		Computers and Documentation	Week-5-6	Fri-Wed 10 Hours	Wed-Thu 5 Hours
		Patient Education	Week 6	Thu - Fri 5 Hours	0
		Office Management	Week-7	Fri-Wed 10 Hours	Wed-Thu 5 Hours
MA 300	Medical Records and Assisting	Medical Records	Week-7-8	Fri-Wed 10 Hours	Wed-Thu 5 Hours
		Assisting with	Week-8-9	Fri-Wed	Wed-Thu

	with Physical Examination s and Pharmacology	Physical Exams		10 Hours	5 Hours
		Pharmacology	Week9-10-11	Fri- Mon (Wk. 11) 20 Hours	Tue-Fri 10 Hours
MA 400	Medical Billing	Medical Insurance	Week12	Mon-Thu 10 Hours	Thu-Fri 5 Hours
		Medical Coding	Week 13-14	Mon – Thu 10 Hours	Thu – Thu (Wk. 14) 15 Hours
		Patient Financial Accounts	Week 14-15	Fri – Mon (Wk.15) 5	0
		Bookkeeping and Banking	Week15-16	Tue-Fri 10 Hours	Fri-Mon (Wk. 16) 5 Hours
MA 500	Anatomy and Physiology -1	Body Structure	Week16-17	Tue-Fri 10 Hours	Fri-Mon (Wk.17) 5 Hours
		Musculoskeletal System	Week17-18	Tue - Fri 10 Hours	Fri-Mon (Wk.18) 5 Hours
		Cardiovascular System	Week18-19	Tue-Fri 10 Hours	Fri-Mon (Wk.19)

					5 Hours
		Lymphatic and Immune System	Week19-20	Mon-Fri 10 Hours	Fri-Mon (Wk.20) 5 Hours
MA 600	Anatomy and Physiology II	Respiratory and Digestive System	Week 20-21	Mon-Fri 10 Hours	Fri – Wed (Wk.21) 10 Hours
		Nervous and Special Senses System	Week21-22	Thu – Tue (Wk. 22) 10 Hours	Wed-Thu 5
		Urinary and Reproductive System	Week22-23	Fri-Wed (Wk.23) 10 Hours.	Thu-Tue (wk. 23) 10 Hours.
		Endocrine System	Week23-24	Wed-Mon (Wk. 24) 10 Hours	Mon-Thu (Wk. 24) 10 Hours.
MA 700	Clinical Assisting	Venipuncture	Week 24-26	Fri-Wed (wk.24-25) 10 Hours.	Wed-Thu (Wk.26) 20 Hours
		EKG (Electrocardiogram)	Week26-29	Fri-Wed 10 Hours	Wed-Mon (Wk.29) 10 Hours
		Radiology	Week29-30	Tue-Fri 10 Hours	Fri-Wed 10 Hours

MA 800	Assisting with Medical Emergency and Certifications	Microbiology	Week30-32	Thu-Tue 10 Hours	Tue-Fri 10 Hours
		Minor Surgery Assisting	Week 33-34	Mon-Thu 10 Hours	Thu - Tue 10 Hours
		Medical Emergencies	Week34-35	Wed - Mon 10 Hours.	Tue-Fri 10 Hours
		HIPAA, OSHA & CPR Certification	Week 35-36	Mon-Thu 10 Hours	Thu - Wed 10 Hours
MA 900	Rehabilitatio n, Nutrition, Pediatrics/G eriatrics	Medical Specialties	Week 36-37	Thu-Tue 10 Hours	Tue-Thu 5 Hours
		Pediatrics and Geriatrics	Week37-38	Fri-Wed 10 Hours	Wed-Thu 5 Hours
		Rehabilitation	Week38-39	Fri-Wed 10 Hours	Wed-Thu 5 Hours
		Nutrition	Week39-40	Fri-Wed 10 Hours	Wed-Fri 5 Hours
MA 1000	Externship			0	0
	TOTAL			350	245

Medical Assisting Equipment List

ITEM
Student Computers
3-Step Ladder
Adult Mannequins, Child Mannequins
AED
Biohazard Trash Can
Autoclave
Ambu Bag Adult, Ambu Bag Infant
BP Monitor w/Digital Multicuff
Centrifuge, Microhematocrit Centrifuge
EKG Machine
Emergency Eyewash Station
Exam Table, Mayo stand
Glucometer, Otoscope, Ophthalmoscope
Gooseneck Lamp
Holter Monitor
Infant Mannequins
Laryngeal mirror, Nasal speculum, Reflex hammer
Microscope
Peak Flow Meter
Pediatric Scale, Adult Scale w/ Height Bar
Pen Light
Phlebotomy Chair, Venipuncture Arm

Pulse Oximeter, Sphygmomanometer
Sharps Container
Skin Staple Remover
Surgical Instruments
Teaching Stethoscope, Audiometer
Tripod Cane, Quad Base Cane
Tube Gauze Applicator
Tuning Fork
Tympanic Thermometer
Uterine Dilator
Vital Signs Monitor
Walker, Wheelchair, Crutches, Standard Cane

Textbooks and other required Materials

Books:

1. Medical Assisting: Administrative and Clinical Procedures with Anatomy and Physiology by [Kathryn A. Booth](#) (Author), [Leesa G. Whicker](#) (Author), [Terri D. Wyman](#) (Author)
ISBN-13: 978-0073402321
ISBN-10: 007340232X
2. Student Workbook for use with Medical Assisting: Administrative and Clinical Procedures with Anatomy and Physiology by [Kathryn A.](#) (Author), [Leesa G. Whicker](#) (Author), [Terri D. Wyman](#) (Author)

ISBN-13: 978-1260477023

ISBN-10: 1260477029

3. Electronic Health Records for Allied Health Careers w/Student CD-ROM
by Susan Sanderson (Author)

ISBN-13: 978-0073309781

ISBN-10: 0073309788

4. Medical Terminology for Health Professions by Ann Ehrlich (Author), Carol L. Schroeder (Author), Laura Ehrlich (Author), Katrina A. Schroeder (Author)

ISBN-13: 978-1305634350

ISBN-10: 1305634357

Software:

1. ClaimGear from CollaborateMD (Free Software).
2. Keyboarding Pro (CD) by Susie VanHuss (Author), Connie Forde (Author), Donna Woo (Author)

ISBN-13: 978-0840053350

ISBN-10: 0840053355

**Ai Powered Administrative Assistant
Total Hours: 300
(22 Weeks)**

The **Certificate program** in Office Business Administration is designed to provide

students with knowledge of office and business administrative functions, including business fundamentals, leadership, project management, managerial communications, business communication, business accounting, business report preparation etc. The Office Business Administration program prepares students for an entry-level Office Business Administration position in a typical business environment, in as few as 4 months.

Learning Outcome:

The learning outcome of this course is to have students equipped with the skill sets essentials for:

- Be able to prepare business documents.
- Be able to manage records.
- Be able to demonstrate business communication skills.
- Be able to manage business conferences, team events and travels.
- Be able to demonstrate accurate and thorough basic administrative accounting skills.
- Be able to carry out business HR department administrative tasks.
- Be able to carry out business payroll administrative tasks.
- Be able to carry out administrative tasks of inventory management.
- Be able to carry out administrative tasks of budget and project management.
- Be able to support management in office and business administration.

Courses and Hours

Module	Hours
Introduction to “Office Business Administration”	3
Office and Business Policies and Procedures.	3
Office and Organization Management	6
Basics of Business Law.	3
Office and Business Layouts and Planning.	3
Hardware and Software in an Administrative Assistant World	6
Business Documents and Creation.	21
Business Research and Presentation.	24
Information & Record Management	18
Interpersonal and Business Communication Management.	18
Business Meetings, Conference and Travel Management.	36
Business Accounting Basics.	36
Human Resource Management.	15
Payroll Management	18
Operations and Inventory Management	18
Project and Budget Management.	24
Case Studies.	48

Total	300
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Program Syllabus
Total Hours: 300

Mode of Instruction: Virtual Live Instructor Driven.

Course Number	Courses	Module	Lecture Hours	Lab Hours
OBA-100	Introduction to "Office Business Administration"	Introduction to "Office Business Administration"	3	
OBA-200	Office and Business Policies and Procedures.	Introduction to Office and Business Policies and Procedures.	3	
OBA-300	Office and Organization Management	Introduction to Organization Management and Role of an Administrator	3	
		Introduction to Teams in an Organization and Role of an Administrator	3	
OBA-400	Basics of Business Law.	Introduction to the Basics of Business Law.	3	
OBA-500	Office and Business Layouts and	Introduction to Office and Business Layouts and Planning	3	

	Planning.			
OBA-600	Hardware and Software in an Administrative Assistant World	Introduction to Hardware and Software in an Administrative Assistant World	6	
OBA-700	Business Documents and Creation.	Introduction to Business Documents	3	
		Software and Tools used by Administrator for creation of business documents. (MS 365 – MS Word, MS-Excel, Google Docs and ChatGPT)	3	15
OBA-800	Business Research and Presentation.	Introduction to Business Research of Information	3	
		Software and Tools used by Administrator for Business Research. (Google Search, ChatGPT and MS Bing)	3	6
		Introduction to Presentation	3	
		Software and Tools used by Administrator for Business Presentation. (Power Points and	3	6

		Beautiful.ai)		
OBA-900	Information & Record Management	Introduction to Business Information and Business Record Management.	3	
		Software and Tools used by Administrator in Business Information and Record Management. (MS Dynamics, MS Azure, Zuna ERP)	3	12
OBA-1000	Interpersonal and Business Communication Management.	Introduction to Interpersonal and Business Communication.	3	
		Software and Tools used by Administrator in Interpersonal and Business Communication Management. (MS-Team, Zoom, MS Outlook, Google Email and Slack)	3	12
OBA-1100	Business Meetings, Conference and Travel Management.	Introduction to Business Meetings, Business Conferences and Event Scheduling.	3	
		Software & Tools used by Administrator in Business Meetings,	3	15

		Conferences and Scheduling (MS Team, Zoom, MS Dynamics, Ever-Note and Google Calendar)		
		Introduction to Business Travel Management	3	
		Software & Tool used by Administrator in Business Travel Management. (Travel Perks and MS Dynamics)	3	9
OBA-1200	Business Accounting Basics.	Introduction to Business and Office Accounting Basics.	9	
		Software and Tools used by Administrator in Business and Office Accounting. (Quick Books and MS Excel)	3	12
		Introduction to Business Expense Management.	3	
		Software Tools used by Administrator in Business Expense	3	6

		Management. (Quick Books and MS Excel)		
OBA-1300	Human Resource Management.	Introduction to Human Resource (HR) Management.	3	
		Software Tools used by Administrator in HR Management. (MS – Dynamics and Intuit)	3	9
OBA-1400	Payroll Management	Introduction to Payroll Management.	6	
		Software and Tools used by Administrator for Payroll Management. (Intuit and Quick Books)	3	9
OBA-1500	Operations and Inventory Management	Introduction to Inventory Management.	3	
		Software and Tools used by Administrator for Inventory Management. (MS – Dynamics and Zuna ERP)	3	12

Pre-requisites: None.

Total clock hours: 3

Introduction to the basics of 'Office and Business Administration'. Introduction to small, medium, and large businesses. Why organizations need administrative assistants and explore the types of work that they perform. Introduction to the different administrative specialties and look at an overview of their varied duties and requirements.

OBA 200: Office and Business Policies and Procedures.

Introduction to Office and Business Policies and Procedures.

Pre-requisites: None.

Total clock hours: 3

The role of administrative assistants is coordinating numerous office activities. This module examines how to create practical policies and procedures. You will focus on the use of policies and procedures that meet organizational objectives and create order in your day-to-day activities.

OBA 300: Office and Organization Management.

Introduction to Organization Management and Role of an Administrator

Pre-requisites: None.

Total clock hours: 3

How business resources are organized so employees can productively perform job duties and complete tasks. The purpose of organization and examining several coordinating principles, including authority, power, and span of control. The purpose of the staffing function and how to evaluate such key elements as recruitment, selection, appraisal, and development. Six different forms of

organizational charts.

Introduction to Teams in an Organization and Role of an Administrator

Pre-requisites: None.

Total clock hours: 3

This module covers why change is so important, reviews why people are reluctant to change, and explores strategies that can help overcome resistance to change. Establishing a winning team and leading through the stages of recruiting, evaluating, and selecting team members. Explore the concepts of a core team, extended team, and the overly important team. The module explores and discusses the complete performance planning process, including how to address performance problems and how to make reviews more meaningful.

OBA 400: Basics of Business Law.

Introduction to the Basics of Business Law.

Pre-requisites: None.

Total clock hours: 3

Introduction to the basics of business law. Introduction to key legal concepts, such as the principal-agency relationship and the basics of contracts. The module explores the idea of law, going through an overview of the legal system, and discussing the essence of commercial law. Module tackles the essentials of contracts, such as the elements and the various types, and Uniform Commercial Code (rules applying to many types of commercial

contracts, including contracts related to the sale of goods, leasing of goods, use of negotiable instruments, banking transactions, letters of credit, documents of title for goods, investment securities, and secured transactions).

OBA 500: Office and Business Layouts and Planning.

Introduction to Office and Business Layouts and Planning

Pre-requisites: None.

Total clock hours: 3

As an administrative assistant's role in office planning. Understanding the concept that an office is an interdependent system where everything works together. The requirements of bringing different components in creation of an office environment.

OBA 600: Hardware and Software in an Administrative Assistant World

Introduction to Hardware and Software in an Administrative Assistant World

Pre-requisites: None.

Total clock hours: 6

Administrative assistant role in inputting and storing data, retrieving, and analyzing information, and producing presentations, newsletters, numerical reports, graphs, and charts. The module focuses on computer hardware and software and on understanding the properties of your office computer system. Case studies are discussed.

OBA 700: Business Documents and Creation.

Introduction to Business Documents**Pre-requisites: None.****Total clock hours: 3**

Administrative assistant, role in reading and composing business documents.

This module's objective is to enhance your business writing skills. After you finish this lesson, you will have an increased ability to write high- quality business documents. Case studies are discussed.

Software and Tools used by Administrator for creation of business documents.**Pre-requisites: None.****Total clock hours: 18**

Complete and Comprehensive Hands -on training on Software and other tools used by Administrator for creating business documents.

OBA 800: Research and Presentation.**Introduction to Research of Information****Pre-requisites: None.****Total clock hours: 3**

This module will teach how to perform basic research—something administrative assistants are often asked to do.

Software and Tools used by Administrator for Business Research.**Pre-requisites: None.****Total clock hours: 9**

Complete and Comprehensive Hands -on training on Software and other tools used by Administrator for creating business research.

Introduction to Presentation.

Pre-requisites: None.

Total clock hours: 3

It also discusses the steps to take to create a meaningful and memorable presentation, including strategies for starting the preparation and the software that can help to create a polished piece.

Software and Tools used by Administrator for Business Presentations.

Pre-requisites: None.

Total clock hours: 9

Complete and Comprehensive Hands -on training on Software and other tools used by Administrator for creating business presentations.

OBA 900: Information & Record Management.

Introduction to Business Information and Business Record Management.

Pre-requisites: None.

Total clock hours: 3

Introduction to Information management in the business world. Key elements of Information management - information collection, storage, distribution, archiving, and destruction. Learn how to effectively use information management to create a successful office operation and help increase your value to your organization. Case studies are analyzed from different sized organizations. Students will also learn how to productively use reprographics and manage records, two duties that are frequently handled by administrative assistants. Students will also learn that records management is the management of paper documents, micro media, and other electronic documents. Case studies are analyzed from different sized organizations.

Software and Tools used by Administrator in Business Information and Record Management.

Pre-requisites: None.

Total clock hours: 15

Complete and Comprehensive Hands -on training on Software and other tools used by Administrator for business record management.

OBA 1000: Interpersonal and Business Communication Management.

Introduction to Interpersonal and Business Communication.

Pre-requisites: None.

Total clock hours: 3

This module identifies the importance of business communication and the importance of an administrator assistant in managing the business communication network. This module introduces how communications technology enables you to access information, share knowledge, and communicate without boundaries. Case studies are analyzed from different sized organizations. This module also highlights the importance of an administrative assistant's interpersonal communication in a variety of ways, ranging from one-on-one to communicating in a group. This lesson will explain how to share thoughts and ideas to create the first part of communication and how to create the second part by listening, interpreting, and reacting to feedback.

Software and Tools used by Administrator in Interpersonal and Business Communication Management.

Pre-requisites: None.

Total clock hours: 15

Complete and Comprehensive Hands -on training on Software and other tools used by Administrator for business communication management.

OBA 1100: Business Meetings, Conference and Travel Management.

Introduction to Business Meetings, Business Conferences and Scheduling.

Pre-requisites: None.

Total clock hours: 3

This module covers scheduling and coordinating meetings, conferences, and business events. Important role of administrative assistant, in helping co-workers arrive at the right place at the right time. How information and materials can be transferred to enhance the effectiveness of employee participation in meetings. Case studies are analyzed from different sized organizations.

Software & Tools used by Administrator in Business Meetings, Conferences and Event Scheduling.

Pre-requisites: None.

Total clock hours: 18

Complete and Comprehensive Hands -on training on Software and other tools used by Administrator for business meetings, conferences, and scheduling of events.

Introduction to Business Travel management

Pre-requisites: None.

Total clock hours: 3

This module covers scheduling and coordinating of business travel. Important role of administrative assistant, in helping co-workers arrive at the right place at

the right time. How information and materials can be transferred to enhance the effectiveness of employee travel and participation in meetings. Case studies are analyzed from different sized organizations.

Software & Tool used by Administrator in Business Travel Management.

Pre-requisites: None.

Total clock hours: 12

Complete and Comprehensive Hands -on training on Software and other tools used by Administrator for business travel management.

OBA 1200: Business Accounting Basics.

Introduction to Business and Office Accounting Basics.

Pre-requisites: None.

Total clock hours: 9

In this module introduces basic business accounting and financial concepts and fundamentals to help to increase the readiness to use financial information. Students will learn about the general ledger, by seeing the difference between accounting and bookkeeping, and by investigating the different types of accounting. The module will demystify debits and credits and present the accounting equation as a cornerstone of all modern accounting systems. Application of financial system. Review of two vital financial statements found at every organization—the balance sheet and the income statement. How to account for inventories and then discover the significance of cash flow.

Software and Tools used by Administrator in Business and Office Accounting.

Pre-requisites: None.

Total clock hours: 15

Complete and Comprehensive Hands -on training on Software and other tools used by Administrator for business and office accounting.

Introduction to Business Expense management.

Pre-requisites: None.

Total clock hours: 3

Administrator's role in reporting, submitting, approving, reimbursing, and auditing employee-initiated business expenses management. From time to time, the employees of any organization incur expenses to keep the business running, ranging from travel and entertainment expenses to office supplies.

Software and Tools used by Administrator in Business Expense Management

Pre-requisites: None.

Total clock hours: 9

Complete and Comprehensive Hands -on training on Software and other tools used by Administrator for business expense management.

OBA 1300: Human Resource Management.**Introduction to Human Resource (HR) Management.**

Pre-requisites: None.

Total clock hours: 3

Introduction to human resources management. The job responsibilities of an administrative assistant with respect to human resources. Direct and indirect involvement of an administrative assistant in aspects of human resources management and working with HR managers.

Software and Tools used by Administrator in HR Management.

Pre-requisites: None.

Total clock hours: 12

Complete and Comprehensive Hands -on training on Software and other tools used by Administrator for business HR Management.

OBA 1400: Payroll Management

Introduction to Payroll Management.

Pre-requisites: None.

Total clock hours: 6

Administrative assistant's role in the payroll department. The tasks of the assistant include entering payroll data, processing new hire paperwork, and making changes related to tax withholding and employee benefits. Case studies are discussed.

Software and Tools used by Administrator for Payroll Management.

Pre-requisites: None.

Total clock hours: 12

Complete and Comprehensive Hands -on training on Software and other tools used by Administrator for business payroll management.

OBA 1500: Operations and Inventory Management

Introduction to Inventory Management.

Pre-requisites: None.

Total clock hours: 3

The primary tasks of administrative assistant involved managing the inventory. How to process inventory orders, logging items that have been received and items that have been taken from inventory, and physically moving products within the inventory room to the sales floor, and vice versa.

Case studies are discussed.

Software and Tools used by Administrator for Inventory Management.

Pre-requisites: None.

Total clock hours: 15

Complete and Comprehensive Hands -on training on Software and other tools used by Administrator for business inventory management.

OBA 1600: Project and Budget Management.

Introduction to Project and Budget Management.

Pre-requisites: None.

Total clock hours: 6

The role of the administrative assistant for project-based support to the director and project management team. Tasks of arranging meetings, presentations, interviewing clients, and preparing proposals, among others are discussed in detail. Similarly, the role of the administrative assistant for budget creation and budget management team.

Software and Tools used by Administrator for Project and Budget Management.

Pre-requisites: None.

Total clock hours: 18

Complete and Comprehensive Hands -on training on Software and other tools used by Administrator for business budget and project management.

OBA 1700: Case Studies.

Real-time case studies of different Industries and Organizations

Pre-requisites: None.

Total clock hours: 15

Case studies of different organizations are being discussed and studies here.

Practical Training for Office and Business Administrator for different Organization types.

Pre-requisites: None.

Total clock hours: 33

A real-time practice as an office and business administrator for different organizations using all the tools and software learned so far.

Program Schedule (Sequence of Classes)

The Office and Business Administration Program is scheduled to start on the First Monday of the first Month of the Year – Last for 20 Weeks.

All the classes are held at 380 N. First Street, 101A, San Jose CA 95110.

The Class Timings: 9.00 AM – 12.00 PM. Monday – Friday.

Course Number	Courses	Module	Lecture Hours	Lab Hours	Week
OBA-100	Introduction to “Office Business Administration”	Introduction to “Office Business Administration”	3		Week# 1
OBA-200	Office and Business Policies and Procedures.	Introduction to Office and Business Policies and Procedures.	3		Week# 1
OBA-300	Office and Organization	Introduction to Organization	3		Week# 1

	Management	Management and Role of an Administrator			
		Introduction to Teams in an Organization and Role of an Administrator	3		Week# 1
OBA-400	Basics of Business Law.	Introduction to the Basics of Business Law.	3		Week# 1
OBA-500	Office and Business Layouts and Planning.	Introduction to Office and Business Layouts and Planning	3		Week# 2
OBA-600	Hardware and Software in an Administrative Assistant World	Introduction to Hardware and Software in an Administrative Assistant World	6		Week# 2
OBA-700	Business Documents and Creation.	Introduction to Business Documents	3		Week# 2
		Software and Tools used by Administrator for creation of business documents. (MS 365 – MS Word, MS-Excel, Google Docs and	3	15	Week# 2 &3

		ChatGPT)			
OBA-800	Business Research and Presentation.	Introduction to Business Research of Information	3		Week# 4
		Software and Tools used by Administrator for Business Research. (Google Search, ChatGPT and MS Bing)	3	6	Week# 4
		Introduction to Presentation	3		Week# 5
		Software and Tools used by Administrator for Business Presentation. (Power Points and Beautiful.ai)	3	6	Week# 5
OBA-900	Information & Record Management	Introduction to Business Information and Business Record Management.	3		Week# 6
		Software and Tools used by Administrator in Business Information and Record	3	12	Week# 6&7

		Management. (MS Dynamics, MS Azure, Zuna ERP)			
OBA-1000	Interpersonal and Business Communication Management.	Introduction to Interpersonal and Business Communication.	3		Week# 7
		Software and Tools used by Administrator in Interpersonal and Business Communication Management. (MS-Team, Zoom, MS Outlook, Google Email and Slack)	3	12	Week# 7&8
OBA-1100	Business Meetings, Conference and Travel Management.	Introduction to Business Meetings, Business Conferences and Event Scheduling.	3		Week# 8
		Software & Tools used by Administrator in Business Meetings, Conferences and Scheduling	3	15	Week# *-8-9

		(MS Team, Zoom, MS Dynamics, Ever-Note and Google Calendar)			
		Introduction to Business Travel Management	3		Week# 9
		Software & Tool used by Administrator in Business Travel Management. (Travel Perks and MS Dynamics)	3	9	Week# 9-10
OBA-1200	Business Accounting Basics.	Introduction to Business and Office Accounting Basics.	9		Week# 10-11
		Software and Tools used by Administrator in Business and Office Accounting. (Quick Books and MS Excel)	3	12	Week# 11-13
		Introduction to Business Expense Management.	3		Week# 13
		Software Tools	3	6	Week#

		used by Administrator in Business Expense Management. (Quick Books and MS Excel)			13-14
OBA-1300	Human Resource Management.	Introduction to Human Resource (HR) Management.	3		Week# 14
		Software Tools used by Administrator in HR Management. (MS – Dynamics and Intuit)	3	9	Week# 14-15
OBA-1400	Payroll Management	Introduction to Payroll Management.	6		Week# 15
		Software and Tools used by Administrator for Payroll Management. (Intuit and Quick Books)	3	9	Week# 15-16
OBA-1500	Operations and Inventory Management	Introduction to Inventory Management.	3		Week# 16

			132	168	
	Total		300		

Office and Business Administration Equipment List

ITEM
Student Computers
Office Chair
Office Desk
Office Phone
Office Computer with all the office software tools.
Office Printer
Office Shelves
Office Sanitation Items
Office Supplies

Textbooks and other required Materials

Books:

The Administrative Professional: Technology & Procedures, Spiral bound
Version 15th Edition.

ISBN-10
9781305581166

All the classroom lecture materials are provided to the students in three different fashions:

1. USB
2. Online access
3. Paperback (by request only).

Software (student will be given access to use these software):

1. Microsoft 365 suite
2. Google Office Suite
3. Slack
4. Intuit and Quick Books
5. Intuite
6. TravelPerks
7. Microsoft Dynamics
8. Zuna ERP Software

Business Finance Administrative Assistant
Total Hours: 300
(20 Weeks)

The entry-level Certificate program in Business Finance Administrative Assistant is designed to provide students with knowledge of office and business finance and accounting administrative functions including business fundamentals and focused on the administrative aspect of business accounting and finance operations. The Business Finance Administrative Assistant Program prepares students for an entry-level Business Administrative Finance Clerk / Assistant position in a typical business environment, in as few as 3 months.

Business Finance Administrative Assistant Course
Total Hours: 300

Course Module	Hours
Introduction to Office Management and Administration	12
Business Ethics and Professionalism	8
Business Communication and Correspondence	12
Business Office Administrative Software Tools.	45
Time, Attendance, and Expense Management	21
Introduction to Business and Finance	6
Basic Accounting and Bookkeeping	45
Basic Financial Analysis	36
Data Entry and Record Keeping	36
Accounts Receivable and Payable	36
Creation of financial Report and Secured Communications	15

Case Studies	28
Total	300

Learning skills and other competencies acquired by students after completion of the program:

- Understanding business administration principles, including organizational structures, management practices, and human resources management.
- Communication and interpersonal skills, including the ability to communicate financial information clearly and effectively, both in written and verbal forms.
- Time management and organizational skills, with the ability to prioritize tasks and meet deadlines.
- Ability to perform administrative tasks such as data entry, scheduling appointments, and managing electronic communication.
- Knowledge of basic business accounting concepts.
- Knowledge of basic financial concepts and principles, such as budgeting, accounting, and financial analysis.
- Ability to use software and technology tools commonly used in the finance and administrative field, such as spreadsheets, databases, and financial management software.
- Attention to detail and problem-solving skills, with an ability to identify and resolve errors in financial records.

- Understanding of ethical and professional standards in the finance and administrative field, with a focus on maintaining confidentiality and accuracy in financial records.

Business Finance Administrative Assistant Program

Hours: 300

Mode of Instruction: Virtual Live Instructor Driven.

Program Syllabus

Course Number	Courses	Module	Lecture Hours	Lab Hours
BFA-100	Introduction to “Office Business Administration”	roduction to “Office Business Administration”	3	
		Office organization and filing systems.	2	1
		Telephone and email etiquette	2	1
		Time management and task prioritization	2	1
BFA - 200	Business Ethics and Professionalism	Introduction to business ethics.	2	
		Professionalism in the workplace.	2	
		Confidentiality and	2	

		data privacy.		
		Conflict of interest.	2	
BFA - 300	Business Communication and Correspondence	Business writing skills	3	
		Email etiquette and formatting	3	
		Business letter writing	3	
		Report writing & Presentation.	3	
BFA - 400	Business Office Administrative Software Tools	Introduction to Microsoft Office and Dynamics.	6	
		Word processing with Microsoft Word and Artificial Intelligence Tools (ChatGPT)	3	6
		Spreadsheets and data analysis with Microsoft Excel and MS Dynamics.	3	9
		Presentations with Microsoft PowerPoint and Artificial Intelligence Tools (Beautiful.ai)	3	6
		Email and Team Communication	3	6

		Management with MS Outlook		
BFA - 500	Time, Attendance, and Expense Management	Introduction to Time, Attendance and Expense Management.	5	
		Leave Management using MS Dynamics Leave Management Tool.	2	2
		Time tracking and payroll management using MS-Dynamics Payroll and Time Tracking Management Tool.	2	2
		Attendance tracking using MS-Dynamics Attendance Management Tool.	2	2
		Expense tracking using MS-Dynamics Expense Management Tool.	2	2
BFA - 600	Introduction to Business and Finance	Overview of business and finance	2	
		Types of businesses and organizational structures	2	

		Financial reporting and accounting	2	
BFA - 700	Basic Accounting and Bookkeeping	Introduction to accounting.	3	
		Introduction to Quick Books Accounting Tool	3	15
		Double-entry accounting	3	3
		Financial statements	3	6
		Accounts payable and receivable	3	6
BFA - 800	Basic Financial Analysis	Introduction to financial analysis	3	6
		Ratio analysis	3	6
		Break-even analysis	3	6
		Budgeting and Forecasting	3	6
BFA - 900	Data Entry and Record Keeping	Introduction to data entry	3	6
		Accuracy and attention to detail	3	6
		Record keeping and data management	3	6
		Data backup and	3	6

		recovery		
BFA - 1000	Accounts Receivable and Payable	Introduction to accounts receivable and payable	3	6
		Invoicing and billing	3	6
		Payment processing and reconciliation	3	6
		Debt collection	3	6
BFA- 1100	Creation of Financial Reports and Secure Communications.	Introduction to finance report generation and presentation.	3	3
		Introduction to Cloud Communication Security through MS AZURE	3	6
OBA- 1200	Case Studies.	Real-time case studies of different Industries and Organizations.	8	20
			130	170
	Total		300	

Business Finance Administrative Assistant Program Description

BFA-100: Office Management and Administration

Introduction to office business administration.

Pre-requisites: None.

Total clock hours: 3

Introduction to the basic concept of office administration. Office management is the technique of planning, organizing, coordinating, and controlling office activities with a view to achieving business objectives and is concerned with efficient and effective performance of the office work. The success of a business depends upon the efficiency of its office.

Office organization and filing systems.

Pre-requisites: None.

Total clock hours: 3

Introduction to effective filing techniques in an office and business environment.

Telephone and email etiquette.

Pre-requisites: None.

Total clock hours: 3

Introduction to Always keep in mind that effective business telephone etiquette requires the student to be prepared, present, polite, patient, personable, professional, proactive.

Time management and task prioritization.

Pre-requisites: None.

Total clock hours: 3

Introduction to the concept of proper utilization of time and prioritization of activities, one can easily provide a better quality of work. Prioritization helps students to focus on important tasks by keeping them in the highest priority which enables you to work on them with full attention and focus. Hence, the quality of the work is improved.

BFA-200: Business Ethics and Professionalism**Introduction to business ethics**

Pre-requisites: None.

Total clock hours: 2

Introduction to Business Ethics. '*Business Ethics*' can be termed as a study of proper *business* policies and practices regarding potentially controversial issues, such as *corporate* governance.

Professionalism in the workplace

Pre-requisites: None.

Total clock hours: 2

Introduction to the concept of 'professionalism' at work. It means communicating effectively and appropriately and always finding a way to be productive.

Employers want new workers to be responsible, ethical, and team oriented, and to possess strong communication, interpersonal, and problem-solving skills. Wrap these skills up all together and you've got professionalism.

Confidentiality and data privacy

Pre-requisites: None.

Total clock hours: 2

Introduction to business data and the importance of protecting the data from breach. Importance and data security and techniques used in the industry to protect it.

Conflict of interest

Pre-requisites: None.

Total clock hours: 2

Introduction to the concept of conflict of interest at a workplace. A conflict of interest in the workplace is when someone's personal obligations or loyalties clash with their duties in the workplace. The conflict compromises their ability to make impartial decisions, judgments, or actions that serve the best interests of their clients or employer.

BFA-300: Business Communication and Correspondence

Business writing skills

Pre-requisites: None.

Total clock hours: 3

Introduction the basic requirements for a good “Business writing skills’

Email etiquette and formatting

Pre-requisites: None.

Total clock hours: 3

Introduction to Email etiquette and formatting.

Business letter writing

Pre-requisites: None.

Total clock hours: 3

Introduction to what basic rules of writing a professional business letter.

Report writing and Presentation.

Pre-requisites: None.

Total clock hours: 3

Introduction to what is a business reports and how to create and present it to the upper management / team.

BFA-400: Business Office Administrative Software Tools.

Introduction to Microsoft Office and Dynamics.

Pre-requisites: None.

Total clock hours: 6

Introduction to MS office 365 and the Microsoft ERP tool – MS-Dynamics. The basic functionalities and purpose of these administrative tools are being discussed in this module.

Word processing with Microsoft Word and Artificial Intelligence Tools (ChatGPT)

Pre-requisites: None.

Total clock hours: 9

Introduction to the actual usage of MS Word and document creation administrative tools. Hands on training of these tools with relevant case studies are taught in this module.

Spreadsheets and data analysis with Microsoft Excel and MS Dynamics.

Pre-requisites: None.

Total clock hours: 12

Introduction to the actual usage of data analysis and creation administrative tools. Hands on training of these tools with relevant case studies are taught in this module.

Presentations with Microsoft PowerPoint and Artificial Intelligence Tools (Beautiful.ai)

Pre-requisites: None.

Total clock hours: 9

Introduction to the actual usage of report creation and presentation administrative tools. Hands on training of these tools with relevant case studies are taught in this module.

Email and Team Communication with MS Outlook

Pre-requisites: None.

Total clock hours: 9

Introduction to the concept of “Email and Communication Management”. Introduction to email management and communication management administrative tools. Hands on training of these tools with relevant case studies are taught in this module.

BFA-500: Time, Attendance and Expense Management

Introduction to time, attendance, and expense management

Pre-requisites: None.

Total clock hours: 5

What is attendance management? Introduction to the concept of “Time and Attendance Management’. Attendance management is the method of keeping track of employee hours, including when they start work, leave work, take breaks, and request time off.

Leave Management using MS Dynamics Leave Management Tool.

Pre-requisites: None.

Total clock hours: 4

Introduction to the concept of “Leave Management’. Introduction to leave management administrative tools. Hands on training of these tools with relevant case studies are taught in this module.

Time tracking and payroll management using MS-Dynamics Payroll and Time Tracking Management Tool.

Pre-requisites: None.

Total clock hours: 4

Introduction to the concept of “Time Tracking Management’. Introduction to Time Tracking Management administrative tools. Hands on training of these tools with relevant case studies are taught in this module.

Attendance tracking using MS-Dynamics Attendance Management Tool.

Pre-requisites: None.

Total clock hours: 4

Introduction to the concept of “Attendance tracking Management’. Introduction to Attendance tracking management administrative tools. Hands on training of these tools with relevant case studies are taught in this module.

Expense tracking using MS-Dynamics Expense Management Tool.

Pre-requisites: None.

Total clock hours: 4

Introduction to how to 'enter and track expenses / management'. Introduction to expense tracking management administrative tools. Hands on training of these tools with relevant case studies are taught in this module.

BFA-600: Introduction to Business and Finance

Overview of business and finance.

Pre-requisites: None.

Total clock hours: 2

Introduction to an overview of Business and its finance. Business Finance Overview. Business Finance is a general term that refers to the raising of capital to finance the capital need of a company. The need for business finance can be triggered by several different things including the startup, expansion, acquisition or exit of a company.

Types of businesses and organizational structures.

Pre-requisites: None.

Total clock hours: 2

Introduction to different types and structures of a modern business. What Are Some Types of Organizational Structures? The four types of organizational structures are functional, multi-divisional, flat, and matrix structures.

Financial reporting and accounting

Pre-requisites: None.

Total clock hours: 2

Introduction to Financial reporting and accounting in a business. Financial Accounting and Reporting (FAR) monitors all Education and General Funds, Designated Funds, Auxiliary Funds, Restricted Funds, and Agency Funds. FAR is

responsible for maintaining a high level of understanding of the rules and regulations and providing technical assistance to the departments.

BFA-700: Basic Accounting and Bookkeeping

Introduction to accounting

Pre-requisites: None.

Total clock hours: 3

Introduction to basics of business accounting. Accounting is a means by which necessary financial information about business enterprise is communicated and is also called the language of business. Many users need financial information to make important decisions. These users can be divided into two broad categories: internal users and external users.

Introduction to QuickBooks Accounting Tool

Pre-requisites: None.

Total clock hours: 18

Introduction to the QuickBooks Tool. All the major functionalities: Invoicing, Bills & Expenses Tracking, Employee Time and Expense Tracking, Online Payments, and Payroll. Hands-on training on this accounting tool.

Double-entry accounting

Pre-requisites: None.

Total clock hours:6

Introduction to the concept of 'Double-Entry accounting'. Hands-on training on this concept and accounting process using QuickBooks accounting tool.

Financial statements

Pre-requisites: None.

Total clock hours: 9

Introduction to the concept of 'Financial Statements'. Hands-on training on this accounting process using QuickBooks accounting tool.

Accounts payable and receivable

Pre-requisites: None.

Total clock hours: 9

Introduction to the concept of 'Accounts Payable'. Hands-on training on this concept and accounting process using QuickBooks accounting tool.

BFA-800: Basic Financial Analysis

Introduction to financial analysis

Pre-requisites: None.

Total clock hours: 9

Introduction to what is a Financial Analysis in a Business. Financial analysis is the process of evaluating businesses, projects, budgets, and other finance-related transactions to determine their performance and suitability. Typically, financial analysis is used to analyze whether an entity is stable, solvent, liquid, or profitable enough to warrant a monetary investment.

Ratio analysis

Pre-requisites: None.

Total clock hours: 9

Introduction to the concept of 'Ratio Analysis'. Hands-on training on this concept and accounting process using QuickBooks accounting tool.

Break-even analysis

Pre-requisites: None.

Total clock hours: 9

Introduction to the concept of 'Break-even Analysis'. Hands-on training on this concept and accounting process using QuickBooks accounting tool.

Budgeting and forecasting

Pre-requisites: None.

Total clock hours: 9

Introduction to Budgeting and Forecasting in business finance management.
Hands-on training on this concept and accounting process using MS Dynamics and QuickBooks accounting tools.

BFA-900: Data Entry and Record Keeping

Introduction to data entry

Pre-requisites: None.

Total clock hours: 9

Introduction to data entry in the business accounting world. Hands-on training on this concept and accounting process using MS Dynamics and QuickBooks accounting tools.

Accuracy and attention to detail

Pre-requisites: None.

Total clock hours: 9

Introduction to the overview of how important it is to be accurate in registering / entering data. Hands-on training on this concept and accounting process using MS Dynamics and QuickBooks accounting tools.

Record keeping and data management.

Pre-requisites: None.

Total clock hours: 9

Introduction to record keeping and data management business accounting world. Hands-on training on this concept and accounting process using MS Dynamics and QuickBooks accounting tools.

Data backup and recovery

Pre-requisites: None.

Total clock hours: 9

Introduction to the concept of data recovery and back up business accounting world. Hands-on training on this concept and accounting process using MS Dynamics and QuickBooks accounting tools.

BFA-1000: Accounts Receivable and Payable

Introduction to accounts receivable and payable

Pre-requisites: None.

Total clock hours: 9

Introduction to the concept of accounts receivable and payable in the business accounting world. Hands-on training on this concept and accounting process using MS Dynamics and QuickBooks accounting tools.

Invoicing and billing

Pre-requisites: None.

Total clock hours: 9

Introduction to the concept of invoicing and billing in a business accounting world. Hands-on training on this concept and accounting process using MS Dynamics and QuickBooks accounting tools.

Payment processing and reconciliation

Pre-requisites: None.

Total clock hours: 9

Introduction to the concept of payment processing and reconciliation in the business accounting world. Hands-on training on this concept and accounting process using MS Dynamics and QuickBooks accounting tools.

Debt collection

Pre-requisites: None.

Total clock hours: 9

Introduction to the concept of debt collection in the business accounting world. Hands-on training on this concept and accounting process using MS Dynamics and QuickBooks accounting tools.

BFA-1100: Creation of Financial Reports and Secure Communications.

Introduction to finance report generation and presentation.

Pre-requisites: None.

Total clock hours: 6

Introduction to the different techniques used to create a finance report. How these reports can be presented to the upper management using cloud storage and communication in a secure fashion. Hands on training with MS Azure cloud web server system.

Introduction to Cloud Communication Security.

Pre-requisites: None.

Total clock hours: 9

Introduction to the security of communicating sensitive data over the cloud / digitally. How these reports can be presented to the upper management using cloud storage and communication in a secure fashion. Hands on training with MS Azure cloud web server system.

BFA-1200: Case Studies

Pre-requisites: None.

Total clock hours: 28

Case Studies: The Financial Statements and other finance projects of different kind, different sized organizations are discussed Students get a chance to work on tutorials from different organization's financial projects.

Program Schedule (Sequence of Classes)

The **Business Finance Administrative Assistant Program** is scheduled to start on the First Monday of the fourth Month of the Year – Last for 20 Weeks.

All the classes are held at 380 N. First Street, 101A, San Jose CA 95110.

The Class Timings: 9.00 AM – 12.00 PM. Monday – Friday.

Course Number	Courses	Module	Lecture Hours	Lab Hours	Week
BFA-100	Introduction to “Office Business Administration”	Introduction to “Office Business Administration”	3		Week#1
		Office organization and filing systems.	2	1	Week#1
		Telephone and email etiquette	2	1	Week#1
		Time management and task prioritization	2	1	Week#1
BFA - 200	Business Ethics and Professionalism	Introduction to business ethics.	2		Week#2
		Professionalism in the workplace.	2		Week#2
		Confidentiality and data privacy.	2		Week#2
		Conflict of interest.	2		Week#2
BFA - 300	Business Communication and Correspondence	Business writing skills	3		Week#2
		Email etiquette and			Week#3

		formatting	3		
		Business letter writing	3		Week#3
		Report writing & Presentation.	3		Week#3
BFA - 400	Business Office Administrative Software Tools	Introduction to Microsoft Office and Dynamics.	6		Week#3
		Word processing with Microsoft Word and Artificial Intelligence Tools (ChatGPT)	3	6	Week#4
		Spreadsheets and data analysis with Microsoft Excel and MS Dynamics.	3	9	Week#4
		Presentations with Microsoft PowerPoint and Artificial Intelligence Tools (Beautiful.ai)	3	6	Week#5
		Email and Team Communication Management with MS Outlook	3	6	Week#6
BFA - 500	Time and Attendance Management	Introduction to Time and Attendance Management.	5		Week#6

		Leave Management using MS Dynamics Leave Management Tool.	2	2	Week#6
		Time tracking and payroll management using MS-Dynamics Payroll and Time Tracking Management Tool.	2	2	Week#7
		Attendance tracking using MS-Dynamics Attendance Management Tool.	2	2	Week#7
		Expense tracking using MS-Dynamics Expense Management Tool.	2	2	Week#7
BFA - 600	Introduction to Business and Finance	Overview of business and finance	2		Week#7
		Types of businesses and organizational structures	2		Week#7
		Financial reporting and accounting	2		Week#8

BFA - 700	Basic Accounting and Bookkeeping	Introduction to accounting.	3		Week#8
		Introduction to Quick Books Accounting Tool	3	15	Week#9
		Double-entry accounting	3	3	Week#11
		Financial statements	3	6	Week#12
		Accounts payable and receivable	3	6	Week#12
BFA - 800	Basic Financial Analysis	Introduction to financial analysis	3	6	Week#13
		Ratio analysis	3	6	Week#13
		Break-even analysis	3	6	Week#14
		Budgeting and Forecasting	3	6	Week#14
BFA - 900	Data Entry and Record Keeping	Introduction to data entry	3	6	Week#15
		Accuracy and attention to detail	3	6	Week#15
		Record keeping and data management	3	6	Week#16
		Data backup and recovery	3	6	Week#16
BFA - 1000	Accounts Receivable and Payable	Introduction to accounts receivable and payable	3	6	Week#17

		Invoicing and billing	3	6	Week#17
		Payment processing and reconciliation	3	6	Week#18
		Debt collection	3	6	Week#18
BFA-1100	Creation of Financial Reports and Secure Communications.	Introduction to finance report generation and presentation.	3	3	Week#18
		Introduction to Cloud Communication Security through MS AZURE	3	6	Week#18
OBA-1200	Case Studies.	Real-time case studies of different Industries and Organizations.	8	20	Week#19-20
			130	170	
	Total		300		

Equipment, Books and Facilities

ITEM
Student Computers

Software Tools (Quick Books, MS Azure, MS Excel, and Online AI Tools)

Textbooks and other required Materials

Books:

Introduction to Financial Accounting

David Annand, Athabasca University & Henry Dauderis

Copyright Year: 2017

Publisher: Lyryx

Language: English

ISBN-13: 978-1517089719

All the classroom lecture materials are provided to the students in three different fashions:

1. USB
2. Online access
3. Paperback (by request only).

Software (student will be given access to use these software):

1. Microsoft 365 suite
2. Quick Books
3. Intuite
4. Microsoft AZURE

AI – Powered Data Analyst
Total Hours: 300
(22 Weeks)

‘Data Mining – Data Analyst’ is a certificate program that is designed to provide students with knowledge of an entry level data miner / analyst. Data Mining – Data Analytics is the process of analyzing raw data to draw out meaningful, actionable insights, which are then used to inform and drive smart business decisions. A data miner / analyst will extract raw data, organize it, and then analyze it, transforming it from incomprehensible numbers into coherent, intelligible information. Having interpreted the data, the data analyst will then pass on their findings in the form of suggestions or recommendations about what the company’s next steps should be. By using software to look for patterns in large batches of data, businesses can learn more about their customers to develop more effective marketing strategies, increase sales and decrease costs. Data mining depends on effective data collection, warehousing, and computer processing.

Learning Outcome:

Students with a skill set that would qualify them to be an entry-level data analyst.

The student will attain knowledge and expertise in:

- Be able to perform Collection of data from ‘safe’, or predetermined sources.
- Be able to perform Storage of data in a pre-existing data storage system, database, or warehouse.
- Be able to perform Cleaning of data.
- Be able to perform Production of reports.
- Be able to perform Creation of dashboards.

- Be able to perform use of in-house databases and data storage systems.

AI – Powered Data Analyst

Total Hours 300

Courses	Hours
Introduction to Data Mining – Data Analysis	12
Data Mining Process	18
Data Mining Tools	155
Data Mining Techniques.	76
Application of Data Mining Techniques and Tools	39
Total	300

Program Syllabus

The mode of instruction is Virtual Live Instructor Driven.

Course Number	Course Title	Module	Lecture Hours	Lab Hours
DMA 100	Introduction to Data Mining – Data Analysis	Introduction to Data Mining and data Analysis	6	
		Data Mining Pros and Cons in Real World	6	

DMA 200	Data Mining Process	Introduction to data Mining Process.	3	
		Business Analysis	3	
		Data Comprehension	3	
		Data Preparation	3	
		Data Modelling	3	
		Results Monitoring	3	
DMA 300	Data Mining Tools	Introduction to Data Mining Tools	3	
		Introduction to Information Systems, Programming, and Database Management	3	6
		Excel and SQL Database Development	6	19
		Python Programming	6	33
		Statistics	12	9
		Tableau- Data Analytics	6	18
		Systems Analysis and Design Data Visualization (Tableau)	6	18
		Prescriptive Analytics	3	7
DMA 400	Data Mining Techniques.	Introduction to Data Mining Techniques	3	
		Clustering	6	3
		Association	6	3

		Data Cleaning	6	3
		Data Visualization	6	3
		Classification	6	3
		Machine Learning	6	3
		Prediction	6	3
		Neural Networks	2	2
		Outlier Detection	3	3
DMA 500	Application of Data Mining Techniques and Tools	Data Mining and Data Analysis Applications	3	
		Sales	3	3
		Marketing	3	3
		Manufacturing	3	3
		Fraud Detection	3	3
		Human Resources	3	3
		Customer Service	3	3
			146	154
	TOTAL		300	

AI – Powered Data Analyst Program Description

DMA 100 - Introduction to Data Mining and Data Analysis

Introduction to Data Mining and data Analysis

Pre-requisites: None.

Total clock hours: 9

Introduction to the basics of ‘Data Mining’ and the role of a Data Analyst in an organization. The importance of data analysis and how the organization’s

business is driven by data.

Data Mining Pros and Cons in Real World

Pre-requisites: None.

Total clock hours: 6

Benefits and limitations of Data Mining and data Analysis are discussed in this module. The value of data and the information derived from the analysis can unearth hidden trends and suggest unique strategies. The cost component to data mining and the relevant infrastructure requirement. Security and privacy concerns of collection of data.

DMA 200 - Introduction to Data Mining Process

Introduction to data Mining Process

Pre-requisites: None.

Total clock hours: 3

Introduction to Data Mining processes. What is the process involved in 'Data Analysis or Data Mining'. The flow of tasks of data analysts along the data mining process. The flow chart of Data Mining.

Business Analysis

Pre-requisites: None.

Total clock hours: 3

Techniques to understand the business before starting any data analysis. The importance of understanding the underlying entity before any data is touched, extracted, cleaned, or analyzed. What are the goals the company is trying to achieve by mining data? What is their current business situation? Before looking at any data, the mining process starts by understanding what will define success at the end of the process.

Data Comprehension**Pre-requisites: None.****Total clock hours: 3**

Techniques to understanding data at hand. This includes what sources are available, how it will be secured and stored, how information will be gathered, and what the outcome or analysis may look like. Importance of limits of data to storage, security, and collection and assesses how these constraints will impact the data mining process.

Data Preparation**Pre-requisites: None.****Total clock hours: 3**

Importance of Data preparation. How data is gathered, uploaded, extracted, or calculated. How data is cleaned, standardized, scrubbed for outliers, assessed for mistakes, and checked for reasonableness. How data is checked for size as an overbearing collection of information which might slow computations and analysis.

Data Modelling**Pre-requisites: None.****Total clock hours: 3**

Introduction to data crunching and data relationships. The types of data mining to search for relationships, trends, associations, or sequential patterns.

Results Monitoring**Pre-requisites: None.****Total clock hours: 3**

The process of conclusion of the data-centered aspect of data mining by assessing the findings of the data model(s). How outcomes are aggregated, interpreted, and presented to decision-makers that have largely been excluded from the data mining process.

DMA 300 – Data Mining Tools

Introduction to Data Mining Tools

Pre-requisites: None.

Total clock hours: 3

Introduction to 'Data Mining' tools and other software programs that help in framing and executing data mining techniques to create data models and test them as well.

Introduction to Information Systems, Programming, and Database Management

Pre-requisites: None.

Total clock hours: 9

Introduction to Information Systems, Programming, and Database Management. Information Systems: What and how a business uses the network of hardware and software to gather information (data). Database: The introduction to database management and relevant query languages used. Introduction programming and scripting languages used in 'Data Mining'.

Excel and SQL Database Development

Pre-requisites: None.

Total clock hours: 25

Introduction to SQL (Structured Query language) and MS Excel. This module covers the entry level to intermediate level SQL language and Excel Worksheet.

Python Programming

Pre-requisites: None.

Total clock hours: 39

Introduction to Python Scripting (programming) language. This module covers the entry level to intermediate level Python Scripting Language.

Statistics

Pre-requisites: None.

Total clock hours: 21

Statistics is an integral component of data mining that provides the tools and analytics techniques for dealing with large amounts of data. It is the science of learning from data and includes everything from collecting and organizing to analyzing and presenting data. Two main statistical methods are used in data analysis: descriptive statistics, which summarizes data using indexes such as mean and median and another is inferential statistics, which draw conclusions from data using statistical tests such as student's t-test are covered in this module.

Tableau- Data Analytics

Pre-requisites: None.

Total clock hours: 24

Comprehensive coverage of 'Data Analytics' and the tool used (Tableau). Tableau is an end-to-end data analytics platform that allows you to prep, analyze, collaborate, and share your big data insights. Tableau excels in self-service visual analysis, allowing people to ask new questions about governed big data and easily share those insights across the organization.

Systems Analysis and Design and Data Visualization (Tableau)

Pre-requisites: None.

Total clock hours: 24

Introduction to 'Data visualization' - a graphical representation of information and data in a pictorial or graphical format. How Data analytics process of analyzing data sets to make decision about the information they have, with specialized software and system tool - Tableau.

Prescriptive Analytics

Pre-requisites: None.

Total clock hours: 10

Introduction to 'Prescriptive Analytics': a process that analyzes data and provides

instant recommendations on how to optimize business practices to suit multiple predicted outcomes. In depth analysis of 'Perspective Analytics' used in businesses.

DMA 400 – Data Mining Techniques

Introduction to Data Mining Techniques

Pre-requisites: None.

Total clock hours: 3

Introduction to Data Mining techniques. Various major data mining techniques have been developed and used, including association, classification, clustering, prediction, sequential patterns, and regression.

Clustering

Pre-requisites: None.

Total clock hours: 6

What is data -clustering - the process of grouping a series of different data points based on their characteristics. How to divide the data into subsets, allowing for more informed decisions in terms of broad demographics (such as consumers or users) and their respective behaviors.

Methods for Data Clustering: Partitioning method, Hierarchical method, Density-based method, Grid-based method, Model-based method

Association

Pre-requisites: None.

Total clock hours: 6

What is an Association rules and how they are used to find correlations, or associations, between points in a data set. Different approaches to association rules. Single-dimensional association and multi-dimensional association.

Data Cleaning

Pre-requisites: None.

Total clock hours: 6

What is the process involved in Data Cleaning in Data Mining? Different Methods for Data Cleaning discussed: Verifying the data, converting data types, removing irrelevant data, eliminating duplicate data points, removing errors, and completing missing values.

Data Visualization

Pre-requisites: None.

Total clock hours: 6

What Is Data Visualization in Data Mining? The process of 'Data visualization'. How the process translates data into graphic form to illustrate its meaning to business stakeholders.

Methods for Data Visualization: Comparison charts, Maps, Heat maps, Density plots, Histograms, Network diagrams, Scatter plots and Word clouds.

Classification

Pre-requisites: None.

Total clock hours: 6

What Is Classification in Data Mining? How 'Classification', a fundamental technique in data mining is applied to nearly every industry. Methods for Data Mining Classification: Logistic regression, Decision trees, K-nearest neighbors (KNN), Naive Bayes and Support Vector Machine (SVM)

Machine Learning

Pre-requisites: None.

Total clock hours: 6

What Is Machine Learning in Data Mining? Methods for Machine Learning Supervised learning, Unsupervised learning, Semi-supervised learning, and Reinforcement learning.

Prediction

Pre-requisites: None.

Total clock hours: 4

What Is Prediction in Data Mining? How is predictive modeling being the most common uses of data mining and works best with large data sets that represent a broad sample size?

Methods for Prediction: Forecast modeling, Classification modeling, Cluster modeling and Time series modeling.

Neural Networks

Pre-requisites: None.

Total clock hours: 3

What Are Neural Networks in Data Mining? How is Neural Networks process used to process data, make decisions, and learn as a human would — or at least as closely as possible. Neural Network Methods: input, “hidden,” and output.

Outlier Detection

Pre-requisites: None.

Total clock hours: 3

What Is Outlier Detection in Data Mining? How outlier detection looks for the unique- the data point or points that differ from the rest or diverge from the overall sample. Methods for Outlier Detection: Numeric outlier, Z-score, DBSCAN and Isolation Forest.

DMA 500 – Application of Data Mining Techniques and Tools

Data Mining and Data Analysis Applications

Pre-requisites: None.

Total clock hours: 6

Introduction to various applications of Data Mining Techniques and Tools in various industries. How and what ‘Data mining’ techniques and tools are used for the exploration of applications in other areas such as web and text analysis, financial analysis, industry, government, biomedicine, and science. Case Studies.

Sales

Pre-requisites: None.

Total clock hours: 9

Case Study: How Data Mining is used in sales department of organizations. How data mining encourages smarter, more efficient use of capital to drive revenue growth. The point-of-sale register of a shop collects sale details - the time a purchase was made, what products were sold together, and what goods are most popular. How this information is used with Data Mining Techniques and tools so that the shop can strategically craft its product line.

Marketing

Pre-requisites: None.

Total clock hours: 9

Case Study: How Data Mining Tools and Techniques are used to make the marketing efforts more effective, the store can use data mining to understand where its clients see ads, what demographics to target, where to place digital ads, and what marketing strategies most resonate with customers. This includes aligning marketing campaigns, promotional offers, cross-sell offers, and programs to findings of data mining.

Manufacturing

Pre-requisites: None.

Total clock hours: 9

Case Study: For companies that produce their own goods, how data mining plays an integral part in analyzing how much each raw material costs, what materials are being used most efficiently, how time is spent along the manufacturing process, and what bottlenecks negatively impact the process. How data mining helps ensure the flow of goods is uninterrupted and less costly.

Fraud Detection

Pre-requisites: None.

Total clock hours: 9

Case Study: How data mining is used in finding patterns, trends, and correlations that link data points together. How a company can use data mining to identify outliers or correlations that should not exist. How a company can analyze its cash flow and find a reoccurring transaction to an unknown account.

Human Resources

Pre-requisites: None.

Total clock hours: 9

Case Study: How data mining is used in human resources that has a wide range of data available for processing including data on retention, promotions, salary ranges, company benefits and utilization of those benefits, and employee satisfaction surveys. How data mining can correlate data to get a better understanding of why employees leave and what entices recruits to join.

Customer Service

Pre-requisites: None.

Total clock hours: 9

Case Study: How data mining can be used to find out about the Customer Service industry. How data mining gathers operational information about customer interactions and summarizes findings to determine weak points as well as highlights of what the company is doing right.

Program Schedule (Sequence of Classes)

The 'Data Mining – Data Analyst' Program is scheduled to start on the First Monday of the first Month of the Year – Last for about 20 Weeks.

All the classes are held at 380 N. First Street, 101A, San Jose CA 95110.

Morning: 9.00 AM – 12.00 PM

Course Number	Course Title	Module	Lecture Hours	Lab Hours	Week
DMA 100	Introduction to Data Mining – Data Analysis	Introduction to Data Mining and data Analysis	6		Week # 1
		Data Mining Pros and Cons in Real World	6		Week # 2-3
DMA 200	Data Mining Process	Introduction to data Mining Process.	3		Week # 3
		Business Analysis	3		Week # 3
		Data Comprehension	3		Week # 3
		Data Preparation	3		Week # 3
		Data Modelling	3		Week # 3
		Results Monitoring	3		Week # 4
DMA 300	Data Mining Tools	Introduction to Data Mining Tools	3		Week # 4
		Introduction to Information Systems, Programming, and Database Management	3	6	Week # 4-5
		Excel and SQL Database Development	6	19	Week # 5-6
		Python Programming	6	33	Week # 6-8
		Statistics	12	9	Week # 8-9
		Tableau- Data Analytics	6	18	Week #

					9-10
		Systems Analysis and Design Data Visualization (Tableau)	6	18	Week # 10-12
		Prescriptive Analytics	3	7	Week # 12
DMA 400	Data Mining Techniques.	Introduction to Data Mining Techniques	3		Week # 12
		Clustering	6	3	Week # 13
		Association	6	3	Week # 13
		Data Cleaning	6	3	Week # 13
		Data Visualization	6	3	Week # 14
		Classification	6	3	Week # 14
		Machine Learning	6	3	Week # 14
		Prediction	6	3	Week # 15
		Neural Networks	2	2	Week # 15
		Outlier Detection	3	3	Week #

					15
DMA 500	Application of Data Mining Techniques and Tools	Data Mining and Data Analysis Applications	3		Week # 16
		Sales	3	3	Week # 16
		Marketing	3	3	Week # 17
		Manufacturing	3	3	Week # 18
		Fraud Detection	3	3	Week # 18
		Human Resources	3	3	Week # 19
		Customer Service	3	3	Week # 19-20
			146	154	
	TOTAL		300		

Equipments, Books and Facilities

ITEM
Student Computers
Software Tools

Textbooks and other required Materials

Books:

Data Analytics Made Accessible by Dr. Anil Maheshwari
ISBN-13: 978-9352604180

A PDF version of the book is given to all the students. All the classroom lecture materials are also provided to the students in three different fashions:

1. USB
2. Online access
3. Paperback (by request only)

Software (student will be given access to use these software):

1. Microsoft Excel
2. SQL / SQL Server (MS Dynamics)
3. Tableau
4. R-Studio
5. MS Azure / AWS / Google Cloud.
6. Zuna ERP Software

Ai Assisted Mobile Application Development
Total Hours: 306
(22 Weeks)

Mobile Application program is a certificate program that is designed to provide students with knowledge of an entry level position as a Mobile Application Developer. Mobile application development is the process of creating software applications that run on a mobile device, such as a smartphone or tablet. This involves using programming languages and software development tools to design, build, and test mobile apps for various platforms, such as iOS and Android. The goal of mobile app development is to create apps that are user-friendly, efficient, and provide a seamless experience to users. The development process typically includes steps such as requirement gathering, design, coding, testing, and deployment.

Learning Outcome:

A mobile application development course can provide students with a variety of technical and creative skills that are useful in the field of app development. The learning outcomes of a mobile application development course:

1. Understanding of mobile app development concepts and technologies:
Students will learn about the different platforms and programming languages used for mobile app development, such as iOS and Android, Swift and Java.
2. User-centered design: Students will learn about designing user-friendly and intuitive interfaces, as well as how to test and refine the design of a mobile app.

3. Coding skills: Students will learn how to write code for mobile apps, including how to use programming concepts such as object-oriented programming, algorithms, and data structures.
4. Testing and debugging: Students will learn how to test mobile apps and identify and fix bugs, as well as how to use debugging tools and techniques.
5. Deployment and distribution: Students will learn how to publish and distribute mobile apps, including how to work with app stores and how to manage app updates.
6. Industry best practices: Students will learn about the latest industry trends and best practices for mobile app development, including security, performance optimization, and app monetization.

In summary, a mobile application development course can provide students with a comprehensive understanding of the app development process, from design to deployment, and the skills necessary to build high-quality mobile apps.

Ai-Assisted Mobile Application Development
Total Hours: 306
Mode of Instruction: Virtual Live Instructor Driven.

Courses (“Modules”)	Instructional hours
Introduction to Mobile Application Development	27
Mobile Development Fundamentals	24
Mobile User Interfaces	18
Cross-Platform Mobile Development	36

Native Mobile Development	39
Mobile Database and Networking	27
Mobile Deployment and Publishing	33
Mobile Testing and Debugging	33
Mobile Security	36
Mobile Project Development	33
Total	306

Program Syllabus

Course Number	Course Title	Module	Lecture Hours	Lab Hours
MAD100	Introduction to Mobile Application Development	Overview of mobile application development	6	
		Types of mobile applications	6	6
		Mobile development platforms and frameworks	3	6
MAD 200	Mobile Development Fundamentals	Object-Oriented Programming concepts	6	6
		Data structures and algorithms	3	3
		Design patterns in mobile development	3	3
MAD 300	Mobile User Interfaces	Mobile UI design Principles	3	3
		Material Design	3	3

		Layout managers and view components	3	3
MAD 400	Cross-Platform Mobile Development	Introduction to cross-platform development	3	3
		React Native	3	6
		Flutter	3	6
		Xamarin	6	6
MAD 500	Native Mobile Development	Introduction to native development	6	6
		iOS development with Swift	3	6
		Android development with Java	3	6
		Hybrid mobile development with Cordova	3	6
MAD 600	Mobile Database and Networking	Local database storage	3	6
		RESTful API integration	3	6
		Network security and encryption	3	6
MAD 700	T Mobile Deployment and Publishing	Introduction to mobile deployment	3	3
		Apple App Store and Google Play Store	3	6

		In-app purchases and advertisements	3	6
		App store optimization (ASO)	3	6
MAD 800	Mobile Testing and Debugging	Introduction to mobile testing	3	3
		Unit testing	3	6
		Emulator and simulator testing	3	6
		Debugging with the Android Studio or Xcode console	3	6
MAD 900	Mobile Security	Mobile application security risks	3	6
		OWASP Top 10 Mobile Risks	3	6
		Data encryption and decryption	3	6
		Secure API communication	3	6
MAD 1000	Project Development	Introduction to mobile project development	3	
		Agile methodologies	3	6
		Scrum and Kanban	3	6
		Project management tools such as Trello or Asana	3	3
		Version Control with Git	3	3
			126	180
TOTAL			306	

AI-Assisted Mobile Application Development

Total Hours: 306

(20 Weeks)

MAD 100 - Introduction to Mobile Application Development

Overview of mobile application development

Pre-requisites: None.

Total clock hours: 6

Mobile Application Development is the process of creating software applications that run on mobile devices such as smartphones and tablets. There are two main types of mobile applications: native apps and hybrid apps.

Types of mobile applications

Pre-requisites: None.

Total clock hours: 12

Native apps are built specifically for a particular operating system such as iOS or Android and offer the best performance and user experience. Hybrid apps, on the other hand, are built using web technologies such as HTML, CSS, and JavaScript and can run on multiple platforms.

Mobile development platforms and frameworks

Pre-requisites: None.

Total clock hours: 9

There are several mobile development platforms and frameworks available to help developers build mobile applications. Some popular platforms include iOS (Swift, Objective-C), Android (Java), React Native, Flutter, and Xamarin. These platforms provide a range of tools and resources to simplify the development process, from UI/UX design to app testing and optimization.

MAD 200 - Mobile Development Fundamentals

Object-Oriented Programming concepts

Pre-requisites: None.

Total clock hours: 12

Mobile Development refers to the process of creating software applications for mobile devices such as smartphones and tablets. A strong foundation in Object-Oriented Programming (OOP) concepts is crucial for mobile developers. This includes understanding object-oriented principles like inheritance, encapsulation, abstraction, and polymorphism.

Data structures and algorithms

Pre-requisites: None.

Total clock hours: 6

In addition to OOP concepts, mobile developers should also have a good understanding of data structures and algorithms. This involves knowledge of various data structures like arrays, linked lists, trees, and graphs and the algorithms used to manipulate them.

Design patterns in mobile development

Pre-requisites: None.

Total clock hours: 6

Design patterns play an important role in mobile development as they provide a set of best practices and solutions to common problems faced by developers. Some commonly used design patterns in mobile development include Model-View-Controller (MVC), Model-View-Presenter (MVP), Model-View-ViewModel (MVVM), and others. Understanding these design patterns can help developers create scalable, maintainable, and reusable code for their mobile applications.

MAD 300 - Mobile User Interfaces

Mobile UI design Principles

Pre-requisites: None.

Total clock hours: 6

Mobile User Interfaces (UI) refer to the visual and interactive elements that users interact with in a mobile application. A well-designed mobile UI can greatly

enhance the user experience and increase engagement. Mobile UI design Principles involve creating a simple, intuitive, and aesthetically pleasing interface for the user. It involves understanding the target audience, their needs, and preferences, and creating a UI that is responsive and accessible to all.

Material Design

Pre-requisites: None.

Total clock hours: 6

Material Design is a design language developed by Google that provides guidelines for the visual and interaction design of mobile applications. It focuses on creating a consistent and cohesive user experience across all platforms.

Layout managers and view components

Pre-requisites: None.

Total clock hours: 6

Layout managers and view components are key components of the UI. Layout managers control the placement of UI elements on the screen, while view components define the visual and interactive elements such as buttons, text fields, and images. The combination of layout managers and view components is essential in creating a functional and aesthetically pleasing UI for the user.

MAD 400 - Cross-Platform Mobile Development

Introduction to cross-platform development

Pre-requisites: None.

Total clock hours: 6

Cross-platform mobile development is a software development approach that allows developers to create applications for multiple mobile platforms using a single codebase. This saves time and resources compared to native app development, where developers need to write separate codes for each platform.

React Native

Pre-requisites: None.

Total clock hours: 9

React Native: React Native is an open-source framework that is built using JavaScript and React.js. It enables developers to build native mobile apps for iOS and Android using a single codebase.

Flutter

Pre-requisites: None.

Total clock hours: 9

Flutter: Flutter is a UI toolkit from Google that helps developers create beautiful, native apps for mobile, web, and desktop from a single codebase. It uses the Dart programming language.

Xamarin

Pre-requisites: None.

Total clock hours: 12

Xamarin: Xamarin is a Microsoft-owned cross-platform development platform that enables developers to build native mobile apps for iOS, Android, and Windows using C# and the .NET framework.

These platforms allow developers to create apps that run on multiple platforms while maintaining the same user experience and performance as native apps.

MAD 500 - Native Mobile Development

Introduction to native development

Pre-requisites: None.

Total clock hours: 12

Native mobile development is a type of mobile development where the developer creates apps that are specifically designed for a particular mobile operating system. It involves the use of platform-specific programming languages, tools, and development environments.

iOS development with Swift

Pre-requisites: None.

Total clock hours: 9

iOS development with Swift involves building apps for the iOS operating system using the Swift programming language. Swift is a powerful and flexible language that has been designed to be easy to learn and use.

Android development with Java

Pre-requisites: None.

Total clock hours: 9

Android development with Java involves building apps for the Android operating system using the Java programming language. Java is a widely used and well-established programming language that is well suited for developing mobile apps.

Hybrid mobile development with Cordova

Pre-requisites: None.

Total clock hours: 9

Hybrid mobile development with Cordova involves using the Cordova platform to build apps that can run on multiple platforms, including iOS and Android. Cordova allows developers to write code in HTML, CSS, and JavaScript and then package it as a native app for deployment on various platforms. This approach provides a convenient way for developers to create apps that can run on multiple platforms without having to write separate code for each platform.

MAD 600 - Mobile Database and Networking

Local database storage

Pre-requisites: None.

Total clock hours: 9

Mobile Database and Networking is a crucial aspect of mobile application development that involves the management and storage of data within the mobile device and communication with external systems.

Local database storage refers to the process of saving data locally within the mobile device. It can be implemented using SQLite, Core Data, or other databases. This type of storage enables the app to work offline and reduces the

dependency on network connectivity.

RESTful API integration

Pre-requisites: None.

Total clock hours: 9

RESTful API integration involves integrating the mobile app with a RESTful web service to access and manage data stored in a remote server. RESTful APIs use HTTP requests to communicate with the server and return data in a standard format such as JSON or XML.

Network security and encryption

Pre-requisites: None.

Total clock hours: 9

Network security and encryption are important considerations when working with sensitive data and communication over the network. Network security measures can include encryption of data during transmission, secure socket layer (SSL), and secure HTTP (HTTPS). Encryption helps to protect sensitive information from unauthorized access and ensures privacy and confidentiality of data.

MAD 700 - Mobile Deployment and Publishing

Introduction to mobile deployment

Pre-requisites: None.

Total clock hours: 6

Mobile Deployment and Publishing is an important aspect of the mobile application development process that involves the distribution and launch of a mobile app to end-users through various app stores.

Apple App Store and Google Play Store

Pre-requisites: None.

Total clock hours: 9

Apple App Store and Google Play Store are the two main app stores where mobile applications can be published. Both stores have strict guidelines that mobile apps must adhere to before they can be approved for publishing.

In-app purchases and advertisements

Pre-requisites: None.

Total clock hours: 9

In-app purchases and advertisements are popular monetization models for mobile apps. In-app purchases refer to the sale of virtual or physical goods within an app, while advertisements allow app developers to earn revenue by displaying ads within the app.

App store optimization (ASO)

Pre-requisites: None.

Total clock hours: 9

App store optimization (ASO) refers to the process of optimizing a mobile app's visibility in the app stores through keyword optimization, app description, and other factors to increase its ranking in the app store search results and increase the likelihood of being discovered by potential users.

MAD 800 - Mobile Testing and Debugging

Introduction to mobile testing

Pre-requisites: None.

Total clock hours: 6

Mobile Testing and Debugging is a crucial aspect of mobile application development that ensures the app runs smoothly and meets the desired quality standards. The testing process helps to identify and resolve any bugs or issues in the app before it is released to the public.

Introduction to mobile testing: Mobile testing is the process of evaluating the functionality, performance, security, and usability of a mobile app.

Unit testing

Pre-requisites: None.

Total clock hours: 9

Unit testing: Unit testing is a technique used to test individual units of code, such as functions or methods, to ensure they perform as expected.

Emulator and simulator testing

Pre-requisites: None.

Total clock hours: 9

Emulator and Simulator testing: Emulators and simulators are virtual environments that allow developers to test their apps on different devices and operating systems without having to physically access the devices.

Debugging with the Android Studio or Xcode console

Pre-requisites: None.

Total clock hours: 9

Debugging with the Android Studio or Xcode console: Debugging is the process of identifying and resolving issues in the code. Android Studio and Xcode provide integrated development environments with built-in debugging tools and consoles to help developers identify and resolve issues in their code.

MAD 900 - Mobile Security

Mobile application security risks

Pre-requisites: None.

Total clock hours: 9

Mobile Security refers to the measures and technologies put in place to ensure the security of mobile devices and the data they store and transmit. It aims to prevent unauthorized access, data breaches, and other security threats.

OWASP Top 10 Mobile Risks

Pre-requisites: None.

Total clock hours: 9

Mobile application security risks include vulnerabilities such as poor code quality, unsecured data storage, and inadequate encryption. The OWASP Top 10 Mobile Risks is a list of the most critical security risks facing mobile applications. It includes threats such as insecure data storage, broken cryptography, and insufficient logging and monitoring.

Data encryption and decryption

Pre-requisites: None.

Total clock hours: 9

Data encryption and decryption is an important aspect of mobile security. Encrypting sensitive data such as passwords and financial information helps prevent unauthorized access and data breaches.

Secure API communication

Pre-requisites: None.

Total clock hours: 9

Secure API communication is also crucial for mobile security. APIs (Application Programming Interfaces) are used by mobile applications to communicate with back-end systems and services. Ensuring secure API communication involves using secure protocols, such as HTTPS, and implementing proper authentication and authorization mechanisms.

MAD 0100 - Mobile Project Development

Introduction to mobile project development

Pre-requisites: None.

Total clock hours: 3

Mobile project development is the process of creating and delivering a mobile application from start to finish. It involves several steps, including planning, design, development, testing, and deployment.

Agile methodologies

Pre-requisites: None.

Total clock hours: 9

Agile methodologies such as Scrum and Kanban are popular methodologies used in mobile project development. They are iterative and flexible, allowing teams to respond to changes quickly and efficiently.

Scrum and Kanban

Pre-requisites: None.

Total clock hours: 9

Scrum and Kanban are project management methodologies used in software development to plan, organize, and manage work.

Scrum is an Agile framework for managing projects. It emphasizes collaboration, flexibility, and continuous improvement. The process is divided into sprints, during which cross-functional teams work together to deliver usable product increments.

Kanban, on the other hand, is a visual system for managing work, inspired by Lean manufacturing principles. It focuses on visualization of work, limiting work in progress and maximizing flow. In Kanban, work items are represented by cards on a board, and their movement through the workflow stages is visualized.

Both Scrum and Kanban have their strengths and weaknesses, and the choice between them depends on the specific needs and constraints of a project.

Project management tools such as Trello or Asana**Pre-requisites: None.****Total clock hours: 6**

Project management tools such as Trello or Asana can be used to manage and track the progress of a project. They provide a centralized platform to manage tasks, deadlines, and team member responsibilities.

Version control with Git**Pre-requisites: None.****Total clock hours: 6**

Version control with Git is also an important aspect of mobile project development. It allows teams to keep track of changes made to the codebase and collaborate effectively. This helps teams to avoid conflicts, improve code quality, and maintain a stable version of the code.

Program Schedule (Sequence of Classes)

The **AI-Assisted Mobile Application Development** Program is scheduled to start

on the First Monday of the fourth Month of the Year – Last for about 22 Weeks.

All the classes are held at 380 N. First Street, 101A, San Jose CA 95110.

Morning: 9.00 AM – 12.00 PM

Course Number	Course Title	Module	Lecture Hours	Lab Hours	Week
MAD100	Introduction to Mobile Application Development	Overview of mobile application development	6		Week#1
		Types of mobile applications	6	6	Week#1
		Mobile development platforms and frameworks	3	6	Week#2
MAD 200	Mobile Development Fundamentals	Object-Oriented Programming concepts	6	6	Week#3
		Data structures and algorithms	3	3	Week#3
		Design patterns in mobile development	3	3	Week#4
MAD 300	Mobile User Interfaces	Mobile UI design Principles	3	3	Week#4
		Material Design	3	3	Week#5
		Layout managers and view components	3	3	Week#5
MAD 400	Cross-Platform Mobile	Introduction to cross-platform development	3	3	Week#6

	Development	React Native	3	6	Week#6
		Flutter	3	6	Week#7
		Xamarin	6	6	Week#7
MAD 500	Native Mobile Development	Introduction to native development	6	6	Week#8
		iOS development with Swift	3	6	Week#8
		Android development with Java	3	6	Week#9
		Hybrid mobile development with Cordova	3	6	Week#10
MAD 600	Mobile Database and Networking	Local database storage	3	6	Week#10
		RESTful API integration	3	6	Week#11
		Network security and encryption	3	6	Week#11
MAD 700	T Mobile Deployment and Publishing	Introduction to mobile deployment	3	3	Week#12
		Apple App Store and Google Play Store	3	6	Week#12
		In-app purchases and advertisements	3	6	Week#13
		App store optimization (ASO)	3	6	Week#13
MAD 800	Mobile Testing and Debugging	Introduction to mobile testing	3	3	Week#14
		Unit testing	3	6	Week#14

		Emulator and simulator testing	3	6	Week#15
		Debugging with the Android Studio or Xcode console	3	6	Week#15
MAD 900	Mobile Security	Mobile application security risks	3	6	Week#16
		OWASP Top 10 Mobile Risks	3	6	Week#1617 17
		Data encryption and decryption	3	6	Week#
		Secure API communication	3	6	Week#18
MAD 1000	Project Development	Introduction to mobile project development	3		Week#18
		Agile methodologies	3	6	Week#19
		Scrum and Kanban	3	6	Week#19
		Project management tools such as Trello or Asana	3	3	Week#20
		Version Control with Git	3	3	Week#20
			126	180	
TOTAL			306		

equipment, Books and Facilities

ITEM
Student Computers
Integrated Development Environment (IDE) such as Android Studio or

Xcode, Software Development Kits (SDKs) such as Android SDK or iOS SDK

Front-end technologies such as HTML, CSS, and JavaScript, Cross-platform mobile development frameworks such as React Native or Flutter, Back-end technologies such as Node.js or Ruby on Rails, Version control systems such as Git, Emulators or simulators for testing and debugging, Project management and collaboration tools such as JIRA or Asana.

Textbooks and other required Materials

Books:

Professional Mobile Application Development

ISBN: 1118203909

ISBN-13: 9781118203903

Authors:

Jeff McWherter, Scott Gowell

A PDF version of the book is given to all the students. All the classroom lecture materials are also provided to the students in three different fashions:

- 1. USB**
- 2. Online access**
- 3. Paperback (by request only)**

Software (student will be given access to use these software):

- 1. Integrated Development Environment (IDE) such as Android Studio or Xcode**

2. Software Development Kits (SDKs) such as Android SDK or iOS SDK
3. Front-end technologies such as HTML, CSS, and JavaScript
4. Cross-platform mobile development frameworks such as React Native or Flutter
5. Back-end technologies such as Node.js or Ruby on Rails
6. Version control systems such as Git
7. Emulators or simulators for testing and debugging.
8. Project management and collaboration tools such as JIRA or Asana.

DevOps – Development & Operations Automation
Total Hours: 330
(22 Weeks)

‘DevOps’ program is a certificate program that is designed to provide students with knowledge of an entry level position as a DevOps engineer. DevOps is an approach to software development, where the development team (Dev) collaborates with the operations department/function (Ops) in all the stages of software development. These include product design, development, testing, deployment, and support. DevOps is a process that enables continuous delivery of the services or products to the customers. It is a method that automates the development, process, and operations to make sure that the software is developed, tested, and delivered quickly with optimum reliability. DevOps training program is specially designed to introduce the concept of DevOps and helps to improve the ability to design, develop, deploy, and operate software and services quickly.

Learning Outcome:

Students with a skill set that would qualify them to be an entry-level DevOps professional. The student will attain knowledge to:

1. Be able to understand and process software product integration and development (CI/CD).
2. Be able to understand and integrate software testing cycle.
3. Be able to understand and integrate Version control and Configuration Management Tools.

4. Be able to install and manage Infrastructure Servers, availability, and scalability of the servers.
5. Automated Installations.
6. Continuous Delivery & Continuous Deployment
7. Fully understand and perform basic concepts and processes of DevOps.

DevOps – Development & Operations Automation Program

Total Hours: 330

Mode of Instruction: Virtual Live Instructor Driven

Courses (“Modules”)	Instructional hours
Introduction to DevOps	24
Source Code Management	24
Continuous Integration and Deployment	24
Infrastructure as Code	45
Containers and Container Orchestration	54
Monitoring and Logging	48
Cloud Computing	27
Security in DevOps	27
Collaboration and Communication in DevOps	33
Best Practices for DevOps	24
Total	330

Program Syllabus

Course Number	Course Title	Module	Lecture Hours	Lab Hours
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DOP 100	Introduction to DevOps	Overview of DevOps	12	
		DevOps culture and principles	3	
		DevOps vs. traditional software development	3	
		DevOps toolchain	3	3
DOP 200	Source Code Management	Introduction to source code management	4	2
		Git and version control	3	3
		Git branching and merging.	3	3
		Collaborating with Git	3	3
DOP 300	Continuous Integration and Deployment	Introduction to continuous integration	3	3
		Configuring CI/CD pipelines	3	3
		Building and testing code with CI tools	3	3
		Automated deployment	3	3
DOP 400	Infrastructure as Code	Introduction to infrastructure as code	3	3
		Automated infrastructure provisioning	3	6
		Configuration management with tools like Puppet, Chef, and Ansible	3	12
		Immutable infrastructure	3	12

DOP 500	Containers and Container Orchestration	Introduction to containers	9	
		Containerization with Docker	3	12
		Container orchestration with Kubernetes	3	12
		Deploying and managing containers	6	9
DOP 600	Monitoring and Logging	Introduction to monitoring and logging	6	3
		Monitoring infrastructure and applications	6	9
		Logging and log analysis	6	9
		Alerting and incident response	3	6
DOP 700	Cloud Computing	Introduction to cloud computing	3	6
		Cloud providers and offerings	3	3
		Cloud architecture and deployment	3	3
		Security and compliance in the cloud	3	3
DOP 800	Security in DevOps	Overview of security in DevOps	4	5
		Secure software development lifecycle	3	3
		Automated security testing	3	3
		Secure infrastructure deployment	3	3
DOP 900	Collaboration and Communication in DevOps	Overview of collaboration and communication in DevOps	9	6

		Agile methodologies	3	3
		Cross-functional collaboration	3	3
		DevOps tools for collaboration and communication	3	3
DOP 1000	Best Practices for DevOps	Introduction to best practices for DevOps	3	3
		Continuous improvement and feedback loops	3	3
		DevOps maturity model	3	3
		Scaling DevOps for large enterprises	3	3
			155	175
TOTAL			330	

DevOps – Development & Operations Automation Program
Total Hours: 330

DOP 100 - Introduction to DevOps

Overview of DevOps

Pre-requisites: None.

Total clock hours: 12

Introduction to the DevOps process and automation. DevOps is a set of practices, tools, and a cultural philosophy that automate and integrate the processes between software development and IT teams. It emphasizes team empowerment,

cross-team communication and collaboration, and technology automation.

DevOps culture and principles

Pre-requisites: None.

Total clock hours: 12

Introduction to DevOps principles. All five principles, Collaboration, Automation, Continuous Improvement, Customer-centric action and create are discussed in detail.

DevOps vs. traditional software development

Pre-requisites: None.

Total clock hours: 12

The differences in traditional software development and DevOps are being discussed here. Within traditional methods there are typically a lot of moving parts to a development cycle, making scheduling quite a challenging task. DevOps is built on continuous smaller releases and automation from a dedicated team, making it much easier to schedule.

DevOps toolchain

Pre-requisites: None.

Total clock hours: 12

What is a development tool chain? The detail of this process is being discussed in detail. What is a DevOps toolchain? A DevOps toolchain includes the tools and technology that enable development and operations teams to collaborate across the entire software lifecycle. It tackles key DevOps fundamentals including continuous integration, continuous delivery, automation, and collaboration.

DOP 200 - Source Code Management

Introduction to source code management

Pre-requisites: None.

Total clock hours: 3

Introduction to source code management and the version control process in software development. Source code management is the practice of tracking modifications to source code. Keeping a running history of the changes made to a codebase helps programmers, developers and testers ensure that they're always working with accurate and up-to-date code and helps resolve conflicts when merging code from multiple sources.

Git and version control

Pre-requisites: None.

Total clock hours: 3

Version control is a system that records changes to a file or set of files over time so that you can recall specific versions later. Git is an open-source distributed version control system that helps software teams create projects of all sizes with efficiency, speed, and asynchronicity. Many people prefer Git for version control for a few reasons: It's faster to commit. Because you commit to the central repository more often in SVN, network traffic slows everyone down. Whereas with Git, you're working mostly on your local repository and only committing to the central repository every so often.

Git branching and merging.

Pre-requisites: None.

Total clock hours: 3

What is branching and merging in git?. Merging Branches. Once you've completed work on your branch, it is time to merge it into the main branch. Merging takes your branch's changes and implements them into the main branch. Depending on the commit history, Git performs merges two ways: fast-forward and three-way merge.

Collaborating with Git

Pre-requisites: None.

Total clock hours: 3

Introduction to collaboration in software version control process. How to navigate the Git system. "What and how to collaborate *with Git* meant emailing repositories around to each other or hosting it on a server only accessible with the terminal.

DOP 300 – Continuous Integration and Deployment

Introduction to continuous integration

Pre-requisites: None.

Total clock hours: 6

Introduction to continuous integration. What is the main idea of continuous integration? Continuous integration (CI) is the practice of automating the integration of code changes from multiple contributors into a single software project. It's a primary DevOps best practice, allowing developers to frequently merge code changes into a central repository where builds and tests then run.

Configuring CI/CD pipelines

Pre-requisites: None.

Total clock hours: 30

Introduction to CI/CD configuration. CI/CD is a method to frequently deliver apps to customers by introducing automation into the stages of continuous delivery, and continuous deployment. CI/CD is a solution to the problems integrating new code can cause for development and operations teams (AKA "integration hell")

Building and testing code with CI tools

Pre-requisites: None.

Total clock hours: 30

Introduction to building testing code in CI/CD tools. While CI is the process to build and test automatically, CD deploys all code changes in a build to the testing or staging environment. CD makes it possible to release builds to the production environment when needed.

Automated deployment

Pre-requisites: None.

Total clock hours: 30

Introduction to automation of deployment. Deployment automation is what enables you to deploy your software to testing and production environments with the push of a button. Automation is essential to reduce the risk of production deployments.

DOP 400 – Infrastructure as Code

Introduction to infrastructure as code

Pre-requisites: None.

Total clock hours: 15

Overview of infrastructure code. Infrastructure as Code (IaC) is the managing and provisioning of infrastructure through code instead of through manual processes. With IaC, configuration files are created that contain your infrastructure specifications, which makes it easier to edit and distribute configurations.

Automated infrastructure provisioning

Pre-requisites: None.

Total clock hours: 15

What is automated infrastructure provisioning? Automating infrastructure provisioning with IaC means that developers don't need to manually provision

and manage servers, operating systems, storage, and other infrastructure components each time they develop or deploy an application.

Configuration management with tools like Puppet, Chef, and Ansible

Pre-requisites: None.

Total clock hours: 15

Introduction to configuration management. In Puppet, the client pulls configurations from the server, whereas in Ansible, the server pushes configurations to the nodes, for instantaneous deployment. Plus, in Puppet, you must write the configurations in Puppet's language, as mentioned, whereas in Ansible you use YAML, which is close to English.

Immutable infrastructure

Pre-requisites : None.

Total clock hours: 15

Introduction to immutable structure in IT environment. Immutable infrastructure is an approach to managing services and software deployments on IT resources wherein components are replaced rather than changed. An application or service is effectively redeployed each time any change occurs.

DOP 500 – Containers and Container Orchestration

Introduction to containers

Pre-requisites: None.

Total clock hours: 9

Introduction to containers in software development. A container is a unit of software that packages code with its required dependencies to run in an isolated, controlled environment.

Containerization with Docker

Pre-requisites: None.

Total clock hours: 22

How does Docker help with containerization? Docker is the containerization platform that is used to package your application and all its dependencies together in the form of containers to make sure that your application works seamlessly in any environment which can be developed or tested or in production.

Container orchestration with Kubernetes

Pre-requisites: None.

Total clock hours: 22

What is the function of container orchestration? Container orchestration automates the provisioning, deployment, networking, scaling, availability, and lifecycle management of containers. What is Kubernetes container orchestration? Kubernetes is a popular open-source platform for container orchestration. It enables developers to easily build containerized applications and services, as well as scale, schedule and monitor those containers.

Deploying and managing containers

Pre-requisites: None.

Total clock hours: 22

What are “containers” in deployment? Containers are a method of building, packaging, and deploying software. A container includes all the code, runtime, libraries, and everything else the containerized workload needs to run. How to use cloud – MS Azure to deploy and manage containers.

DOP 600 – Monitoring and Logging

Introduction to monitoring and logging

Pre-requisites: None.

Total clock hours: 9

Introduction to monitoring and logging in a devOps operation. What is logging and monitoring explain? Logging is a method of tracking and storing data to ensure application availability and to assess the impact of state transformations on performance. Monitoring is a diagnostic tool used for alerting DevOps to system-related issues by analyzing metrics.

Monitoring infrastructure and applications

Pre-requisites: None.

Total clock hours: 22

Introduction to infrastructure monitoring. What is infrastructure and application monitoring? Infrastructure monitoring is used to collect health and performance data from servers, virtual machines, containers, databases, and other backend components in a tech stack.

Logging and log analysis

Pre-requisites: None.

Total clock hours: 22

Introduction to logging and analysis. What is meant by log analysis? Log analysis is a process that gives visibility into the performance and health of IT infrastructure and application stacks, through the review and interpretation of logs that are generated by network, operating systems, applications, servers, and other hardware and software components.

Alerting and incident response

Pre-requisites: None.

Total clock hours: 22

Introduction to Alert and response Management in IT environment. What are

alerts in incident management? Incident alerting is when monitoring tools generate alerts to notify your team of changes, high-risk actions, or failures in the IT environment.

DOP 700 – Cloud Computing

Introduction to cloud computing

Pre-requisites: None.

Total clock hours: 9

Introduction to cloud computing. Cloud computing is the delivery of computing resources *as a service*, meaning that the resources are owned and managed by the cloud provider rather than the end user. All three types of cloud computing are discussed in detail. Infrastructure as a Service (IaaS), Platform as a Service (PaaS), Software as a Service (SaaS)

Cloud providers and offerings

Pre-requisites: None.

Total clock hours: 22

Introduction to cloud providers – AWS, MS AZURE, Google Cloud, etc. What are the different cloud offerings? There are four main types of cloud computing: **private clouds, public clouds, hybrid clouds, and multi-clouds**. There are also three main types of cloud computing services: Infrastructure-as-a-Service (IaaS), Platforms-as-a-Service (PaaS), and Software-as-a-Service (SaaS).

Cloud architecture and deployment

Pre-requisites: None.

Total clock hours: 22

Introduction to cloud deployment. What is cloud deployment architecture? Cloud deployment is the process of deploying an application through one or more

hosting models—software as a service (SaaS), platform as a service (PaaS) and/or infrastructure as a service (IaaS)—that leverage the cloud. This includes architecting, planning, implementing and operating workloads on cloud.

Security and compliance in the cloud

Pre-requisites: None.

Total clock hours: 22

Introduction to security compliance in the cloud. Cloud compliance is the art and science of complying with regulatory standards of cloud usage in accordance with industry guidelines and local, national, and international laws.

DOP 800 – Security in DevOps

Overview of security in DevOps

Pre-requisites: None.

Total clock hours: 9

Introduction to security protocols in DevOps process. DevOps security refers to the discipline and practice of safeguarding the entire DevOps environment through strategies, policies, processes, and technology. Security should be built into every part of the DevOps lifecycle, including inception, design, build, test, release, support, maintenance, and beyond.

Secure software development lifecycle

Pre-requisites: None.

Total clock hours: 22

Introduction to Secure Software Development Cycle (SLDC). A Secure *SDLC* requires adding security testing at each software development stage, from design, to development, to deployment and beyond.

Automated security testing

Pre-requisites: None.

Total clock hours: 22

Introduction to Automation of Security Testing. Automated Security Testing is the process of scanning the application for vulnerabilities using automated tools. This is important because it can help to prevent certain vulnerabilities from being exploited by hackers.

Secure infrastructure deployment

Pre-requisites: None.

Total clock hours: 22

Introduction to Secure Infrastructure deployment. Secure deployment refers to the security of the infrastructure used to deploy the SaaS application. Key issues in secure deployment include Physical Safeguards, Network Security, Infrastructure Security and Data Security.

DOP 900 – Collaboration and Communication in DevOps

Overview of collaboration and communication in DevOps

Pre-requisites: None.

Total clock hours: 9

Introduction to collaboration and communication in devOps. What is DevOps a collaboration and communication of? DevOps is a way to bring together people from development and operations teams by helping them better communicate—both verbally and by using common processes and tools.

Agile Méthodologies

Pre-requisites : None.

Total clock hours: 22

Introduction to Agile methodologies and technologies. Agile is a project

management approach developed as a more flexible and efficient way to get products to market. The word 'agile' refers to the ability to move quickly and easily. Therefore, an Agile approach enables project teams to adapt faster and easier compared to other project methodologies.

Cross-functional collaboration

Pre-requisites: None.

Total clock hours: 22

Introduction to cross functional collaboration in DevOps process. Cross-functional collaboration is the process of running a project that spans various teams and functions within an organization. It draws on expertise across different departments and points all team members toward a common goal. It's a method for reducing siloing and increasing collaboration within an organization.

DevOps tools for collaboration and communication

Pre-requisites: None.

Total clock hours: 22

Introduction to the tools used for collaboration and communication in DevOps process. DevOps is a way to bring together people from development and operations teams by helping them better communicate—both verbally and by using common processes and tools.

DOP 1000 – Best Practices for DevOps

Introduction to best practices for DevOps

Pre-requisites: None.

Total clock hours: 9

Introduction to DevOps best practices. What is DevOps best practice? DevOps best practices include agile project management, shifting left with CI/CD, automation, monitoring, observability, and continuous feedback.

Continuous improvement and feedback loops

Pre-requisites: None.

Total clock hours: 22

Introduction to continuous feedback loop in DevOps process. Value stream mapping is a technique that DevOps teams can use to create a visual guide of all the parts necessary to deliver a product. A problem with value stream mapping is that teams often view the flow of feedback as trickling down only, instead of looping around.

DevOps maturity model

Pre-requisites: None.

Total clock hours: 22

Introduction to devOps maturity models. DevOps Maturity is described as a model that determines an organization's standing in principles of DevOps journey along with deciding what more to be accomplished to achieve the desired results.

Scaling DevOps for large enterprises

Pre-requisites: None.

Total clock hours: 22

What does scale in DevOps mean? Scaling in DevOps is characterized as an automation-driven environment where developers or enterprises can adopt DevOps culture and choose the right technologies to scale their business growth.

Program Schedule (Sequence of Classes)

The 'DevOps' Program is scheduled to start on the First Monday of the Second Month of the Year – Last for about 20 Weeks.

All the classes are held at 380 N. First Street, 101A, San Jose CA 95110.

Morning: 9.00 AM – 12.00 PM

Course Number	Course Title	Module	Lecture Hours	Lab Hours	Week
DOP 100	Introduction to DevOps	Overview of DevOps	12		Week#1
		DevOps culture and principles	3		Week#1
		DevOps vs. traditional software development	3		Week#2
		DevOps toolchain	3	3	Week#2
DOP 200	Source Code Management	Introduction to source code management	4	2	Week#2
		Git and version control	3	3	Week#3
		Git branching and merging.	3	3	Week#3
		Collaborating with Git	3	3	Week#3
DOP 300	Continuous Integration and Deployment	Introduction to continuous integration	3	3	Week#4
		Configuring CI/CD pipelines	3	3	Week#4
		Building and testing code with CI tools	3	3	Week#4
		Automated deployment	3	3	Week#5
DOP 400	Infrastructure as Code	Introduction to infrastructure as code	3	3	Week#5

		Automated infrastructure provisioning	3	6	Week#5
		Configuration management with tools like Puppet, Chef, and Ansible	3	12	Week#6
		Immutable infrastructure	3	12	Week#6
DOP 500	Containers and Container Orchestration	Introduction to containers	9		Week#7
		Containerization with Docker	3	12	Week#8
		Container orchestration with Kubernetes	3	12	Week#9
		Deploying and managing containers	6	9	Week#10
DOP 600	Monitoring and Logging	Introduction to monitoring and logging	6	3	Week#11
		Monitoring infrastructure and applications	6	9	Week#12
		Logging and log analysis	6	9	Week#13
		Alerting and incident response	3	6	Week#14
DOP 700	Cloud Computing	Introduction to cloud computing	3	6	Week#14
		Cloud providers and offerings	3	3	Week#14
		Cloud architecture and deployment	3	3	Week#15
		Security and compliance in the cloud	3	3	Week#15
DOP 800	Security in DevOps	Overview of security in DevOps	4	5	Week#16

		Secure software development lifecycle	3	3	Week#16
		Automated security testing	3	3	Week#16
		Secure infrastructure deployment	3	3	Week#17
DOP 900	Collaboration and Communication in DevOps	Overview of collaboration and communication in DevOps	9	6	Week#18
		Agile methodologies	3	3	Week#19
		Cross-functional collaboration	3	3	Week#19
		DevOps tools for collaboration and communication	3	3	Week#20
DOP 1000	Best Practices for DevOps	Introduction to best practices for DevOps	3	3	Week#20
		Continuous improvement and feedback loops	3	3	Week#21
		DevOps maturity model	3	3	Week#21
		Scaling DevOps for large enterprises	3	3	Week#22
			155	175	
TOTAL			330		

equipment, Books and Facilities

ITEM
Student Computers

Software Tools: MS Azure, AWS, Google Clouds, Terraform, Git and GitHub, Docker, Jenkins, Kubernetes, and Prometheus

Textbooks and other required Materials

Books:

The DevOps Handbook: How to Create World-Class Agility, Reliability, and Security in Technology Organizations by Gene Kim (Author), Patrick Debois (Author), John Willis (Author), Jez Humble (Author), John Allspaw (Foreword).
ISBN-13 :1942788002

A PDF version of the book is given to all the students. All the classroom lecture materials are also provided to the students in three different fashions:

1. USB
2. Online access
3. Paperback (by request only)

Software (student will be given access to use these software):

1. MS Azure, AWS, Google Clouds
2. Terraform
3. Git and GitHub
4. Docker
5. Jenkins
6. Kubernetes
7. Prometheus

AI-Assisted Web Application Development
Total Hours: 321
(21 Weeks)

Web Application Development program is a certificate program that is designed to provide students with knowledge of an entry level position as a Web Application Development engineer. Web Application Development is the process of creating software applications that are accessible through the internet using a web browser. It involves designing, coding, testing, and deploying web applications that can run on servers and be accessed by users through the internet. Web applications typically use web technologies such as HTML, CSS, JavaScript, and server-side programming languages like PHP, Ruby on Rails, Python, and more. The main purpose of web applications is to provide a user-friendly interface and dynamic content that can be accessed from anywhere with an internet connection. Some common examples of web applications include e-commerce websites, social networking sites, project management tools, and content management systems.

Learning Outcome:

A Web Application Development course typically aims to provide students with the knowledge and skills needed to design, build, and maintain web applications. Upon completion of the course, students can expect to have the following learning outcomes:

1. Understanding of web development technologies such as HTML, CSS, JavaScript, and server-side programming languages.

2. Knowledge of software development methodologies, such as Agile and Waterfall.
3. Ability to design and implement a web application from scratch, including planning, coding, testing, and deployment.
4. Understanding of user-centered design principles and how to create user-friendly interfaces.
5. Knowledge of database design and management, and how to integrate a database into a web application.
6. Ability to identify and implement appropriate security measures to protect web applications and sensitive data.
7. Understanding of web development best practices and how to optimize web applications for performance, scalability, and accessibility.
8. Knowledge of how to test and debug web applications and identify and resolve common issues.
9. Understanding of the role of web development in the larger context of digital marketing and e-commerce.

AI-Assisted Web Application Development

Total Hours: 321

Mode of Instruction: Virtual Live Instructor Driven.

Courses (“Modules”)	Instructional hours
Introduction to Web Development	27
HTML and CSS	30
JavaScript	30
Backend Web Development	30

Deployment and Hosting	36
Testing and debugging	33
Security	39
Web Accessibility	24
Advanced Selenium Techniques	33
Project Development	39
Total	321

Program Syllabus

Course Number	Course Title	Module	Lecture Hours	Lab Hours
WAD100	Introduction to Web Development	Overview of web development	6	
		Client-side vs server-side technologies	6	6
		Web development tools and technologies	3	6
WAD 200	HTML and CSS	Introduction to HTML	6	6
		HTML tags and elements	3	3
		CSS selectors and styles	3	3
		Responsive design with CSS	3	3
WAD 300	JavaScript	Introduction to JavaScript	3	3
		Variables, functions, and control structures	3	3
		Arrays, objects, and loops	3	3

		DOM manipulation with JavaScript	3	3
		Asynchronous programming with JavaScript	3	3
WAD 400	Backend Web Development	Introduction to server-side technologies	3	3
		Node.js and Express.js	3	3
		RESTful API design	3	3
		Database integration with MongoDB or MySQL	6	6
WAD 500	Frontend Web Development Frameworks	Introduction to frontend frameworks	6	6
		React.js	3	3
		Angular.js	3	3
		Vue.js	3	3
		State management with Redux or Vuex.	3	3
WAD 600	Deployment and Hosting	Introduction to cloud computing	3	3
		Deploying web applications to platforms such as Heroku or AWS	3	6
		Domain name registration and DNS configuration	3	6
		SSL certificates and HTTPS	3	6

WAD 700	Testing and Debugging	Introduction to testing and debugging.	3	3
		Unit testing with Jest or Mocha	3	6
		End-to-end testing with Cypress	3	6
		Debugging with the browser console	3	6
WAD 800	Security	Introduction to web application security	3	3
		OWASP Top 10 security risks	3	3
		Cross-Site Scripting (XSS)	3	3
		Cross-Site Request Forgery (CSRF)	3	3
		Encryption and decryption	3	3
WAD 900	Web Accessibility	Introduction to web accessibility	3	3
		WCAG 2.0 guidelines	3	6
		ARIA roles and attributes	3	6
		Screen reader compatibility	3	6
WAD 1000	Project Development	Introduction to project development	3	
		Agile methodologies	3	6
		Scrum and Kanban	3	6
		Project management tools such as Trello or Asana	3	6
		Version Control with Git	3	6
			141	174
TOTAL			321	

AI-Assisted Web Application Development

Total Hours: 321

WAD 100 - Introduction to Web Development

Overview of web development

Pre-requisites: None.

Total clock hours: 6

Web Development refers to the creation of websites and applications that run on the internet. It involves a wide range of technologies and skills, including client-side scripting (HTML, CSS, JavaScript), server-side programming (PHP, Python, Ruby, Java), databases (MySQL, PostgreSQL), and more.

Client-side vs server-side technologies

Pre-requisites: None.

Total clock hours: 12

Client-side technologies are executed on the user's device and are responsible for the appearance and behavior of the website, while server-side technologies are executed on the server and are responsible for handling data and serving dynamic content.

Web development tools and technologies

Pre-requisites: None.

Total clock hours: 9

Web development requires a variety of tools, including text editors (such as Sublime Text or Visual Studio Code), version control systems (such as Git), and frameworks and libraries (such as React or Ruby on Rails). Developers also use integrated development environments (IDEs) such as Eclipse or Visual Studio to streamline the development process.

WAD 200 HTML and CSS

Introduction to HTML

Pre-requisites: None.

Total clock hours: 12

HTML (Hypertext Markup Language) is the standard markup language used to create web pages. It provides the structure and content of web pages.

HTML tags and elements

Pre-requisites: None.

Total clock hours:6

HTML tags and elements are used to define the different parts of a web page such as headings, paragraphs, images, links, etc.

CSS selectors and styles

Pre-requisites: None.

Total clock hours: 6

CSS (Cascading Style Sheets) is a styling language used to describe the look and formatting of a web page. CSS selectors and styles are used to control the appearance of different elements on a web page such as font, color, size, spacing, etc.

Responsive design with CSS

Pre-requisites: None.

Total clock hours: 6

Responsive design with CSS is a technique for creating websites that adapt to different screen sizes and devices. It ensures that web pages look good and function well on desktop computers, laptops, tablets, and smartphones. The use of CSS media queries and fluid grid systems makes it possible to create flexible and responsive web designs.

WAD 300 JavaScript

Introduction to JavaScript

Pre-requisites: None.

Total clock hours: 6

JavaScript is a high-level programming language used for both front-end and

back-end web development. It allows for interactivity and dynamic content on web pages.

Variables, functions, and control structures

Pre-requisites: None.

Total clock hours: 6

Introduction to Key concept of Java programming structures.

Some key concepts in JavaScript include:

Variables: Used to store data

Functions: Reusable blocks of code

Control structures: Used to control the flow of a program, such as if/else statements and loops.

Arrays, objects, and loops

Pre-requisites: None.

Total clock hours: 6

Introduction to Arrays and Object and Loops in Java Programming structure.

Arrays:

Arrays in Java are used to store a collection of data of the same type, such as integers, doubles, or objects. An array is created by defining its size and data type, and then assigning values to its elements using square brackets and an index.

Objects:

An object in Java is an instance of a class, which is a blueprint for creating objects. Objects have properties (also known as fields) and methods, which are functions that can be performed on the object. Objects can be created using the "new" keyword and the class constructor.

Loops:

Loops in Java are used to repeat a set of statements a specified number of times or until a certain condition is met. The two main types of loops in Java are the "for" loop and the "while" loop. The "for" loop is used when you know the number of times you want to repeat the loop, while the "while" loop is used when you want to repeat the loop until a certain condition is met.

In conclusion, arrays, objects, and loops are important concepts in Java programming, allowing you to store and manipulate data, create objects, and repeat statements efficiently and effectively. Understanding these concepts is crucial for writing well-structured, efficient, and maintainable Java code.

DOM manipulation with JavaScript

Pre-requisites: None.

Total clock hours: 6

Introduction to DOM manipulation in JavaScript. DOM (Document Object Model) manipulation: Used to interact with and change the structure of a web page.

Asynchronous programming with JavaScript

Pre-requisites: None.

Total clock hours: 6

JavaScript also allows for asynchronous programming, which allows for multiple tasks to be performed in parallel and the ability to respond to events in real-time.

WAD 400 Backend Web Development

Introduction to server-side technologies

Pre-requisites: None.

Total clock hours: 6

Backend web development refers to the server-side programming that powers the functionality and data storage of websites and web applications. This includes the implementation of server-side technologies, frameworks, and databases to create and maintain the underlying infrastructure that supports a website or web application.

Node.js and Express.js

Pre-requisites: None.

Total clock hours: 6

Node.js is a JavaScript-based runtime environment that allows developers to build

fast and scalable server-side applications. Express.js is a popular framework for Node.js that provides a flexible set of tools for building robust and scalable web applications.

RESTful API design

Pre-requisites: None.

Total clock hours: 6

REST (Representational State Transfer) is a standard for creating web services that allows for communication between different applications. RESTful API design refers to the process of designing APIs that adhere to the REST architecture, making it easier for systems to communicate and exchange data.

Database integration with MongoDB or MySQL

Pre-requisites: None.

Total clock hours: 12

Web applications often require the ability to store and retrieve data. This is achieved through the integration of a database system. MongoDB is a popular NoSQL database that provides a flexible and scalable solution for data storage. MySQL is a widely used relational database that is well-suited for structured data storage.

WAD 500 Frontend Web Development Frameworks

Introduction to frontend frameworks

Pre-requisites: None.

Total clock hours: 12

Overview: Frontend web development frameworks are JavaScript libraries that provide a set of tools and components for building complex user interfaces for web applications. They help developers to create interactive, responsive, and dynamic web applications faster and with less code.

React.js

Pre-requisites: None.

Total clock hours: 6

React.js is a popular front-end framework that provides a simple and efficient way to build dynamic user interfaces. It uses a virtual DOM to update only the components that need to change, making it faster and more efficient than other frontend frameworks. React.js is also highly modular, making it easy to scale and maintain complex applications.

Angular.js

Pre-requisites: None.

Total clock hours: 6

Angular.js is a full-featured front-end framework that provides a comprehensive set of tools for building complex and sophisticated web applications. It uses a two-way data binding mechanism that allows developers to keep the user interface and the data model in sync, making it easy to manage and update the application. Angular.js also provides a powerful set of built-in directives and services for managing and manipulating the DOM.

Vue.js

Pre-requisites: None.

Total clock hours: 6

Vue.js is a lightweight and flexible frontend framework that provides a simple and intuitive way to build dynamic user interfaces. It uses a reactive and composable component-based architecture that makes it easy to create reusable and modular components. Vue.js also provides a powerful set of tools for handling state management, making it easy to manage and update the application.

State management with Redux or Vuex.

Pre-requisites: None.

Total clock hours: 6

Vue.js also provides a powerful set of tools for handling state management, making it easy to manage and update the application.

WAD 600 Deployment and Hosting

Introduction to cloud computing

Pre-requisites: None.

Total clock hours: 6

Cloud computing is a delivery model for IT resources and applications, where resources are provided as a service over the internet. Heroku and Amazon Web Services (AWS) are popular cloud platforms that provide deployment and hosting services for web applications.

Deploying web applications to platforms such as Heroku or AWS

Pre-requisites: None.

Total clock hours: 9

Deployment refers to the process of making a web application or software available for use in a production environment. This involves installing, configuring, and testing the application on a server or cluster of servers.

Hosting refers to the service of providing server space and resources for storing, managing, and running a web application. There are various hosting options, including shared hosting, virtual private servers (VPS), and dedicated servers.

Domain name registration and DNS configuration

Pre-requisites: None.

Total clock hours: 9

Domain name registration is the process of reserving a domain name (such as www.example.com) for a website. DNS configuration is the process of associating the domain name with the server hosting the website.

SSL certificates and HTTPS

Pre-requisites: None.

Total clock hours: 9

SSL (Secure Sockets Layer) certificates are used to secure communication between a web server and a client, such as a web browser. HTTPS (Hypertext

Transfer Protocol Secure) is the secure version of HTTP, the protocol used to transmit data over the internet. SSL certificates are required to enable HTTPS on a website.

WAD 700 Testing and Debugging

Introduction to testing and debugging.

Pre-requisites: None.

Total clock hours: 6

Testing is the process of evaluating a system or its component(s) with the intent to find whether it satisfies the specified requirements or not. It involves executing the application with specific inputs and comparing the actual outputs with expected results.

Debugging is the process of identifying and fixing the errors or bugs in an application's code. The goal of debugging is to identify the root cause of the problem and resolve it.

Unit testing with Jest or Mocha

Pre-requisites: None.

Total clock hours: 9

Unit testing is a type of testing that focuses on individual units or components of an application, such as functions or classes. Jest and Mocha are popular JavaScript testing libraries that can be used for unit testing.

End-to-end testing with Cypress

Pre-requisites: None.

Total clock hours: 9

End-to-end testing involves testing the application, from start to finish, to ensure that all the components work correctly together. Cypress is a popular end-to-end testing library for web applications.

Debugging with the browser console

Pre-requisites: None.

Total clock hours: 9

The browser console is a tool available in web browsers that allows developers to view and debug JavaScript code. It can be used to view log messages, inspect the values of variables, and debug errors in real-time.

WAD 800 Security

Introduction to web application security

Pre-requisites: None.

Total clock hours: 6

Web security refers to the protection of web applications, websites, and their users from malicious attacks and security threats.

OWASP Top 10 security risks

Pre-requisites: None.

Total clock hours: 6

The Open Web Application Security Project (OWASP) Top 10 is a widely recognized list of the most critical web application security risks. It provides a prioritized list of security risks and recommendations for how to mitigate them.

Cross-Site Scripting (XSS)

Pre-requisites: None.

Total clock hours: 6

Cross-Site Scripting (XSS) is a type of security vulnerability that allows an attacker to inject malicious code into a web page viewed by other users. This can lead to sensitive information being stolen, or unwanted actions being performed on behalf of the victim.

Cross-Site Request Forgery (CSRF)

Pre-requisites: None.

Total clock hours: 6

Cross-Site Request Forgery (CSRF) is a type of attack that tricks a user into making

unintended actions on a web application. This can happen when a malicious website sends a request to a vulnerable website that the user is already logged into, without the user's knowledge or consent.

Encryption and decryption

Pre-requisites: None.

Total clock hours: 6

Encryption is the process of converting plaintext into ciphertext, making the data unreadable to anyone except the intended recipient. Decryption is the reverse process, converting ciphertext back into plaintext. Encryption is used to secure sensitive information, such as passwords and financial data, during transmission and storage.

WAD 900 Web Accessibility

Introduction to web accessibility

Pre-requisites: None.

Total clock hours: 6

Web accessibility refers to the design of websites, applications, and tools that can be used by people with disabilities. It involves making sure that everyone can access and use the web, regardless of their abilities or disabilities.

WCAG 2.0 guidelines

Pre-requisites: None.

Total clock hours: 9

The Web Content Accessibility Guidelines (WCAG) 2.0 is a set of internationally recognized guidelines for making web content accessible. It provides detailed requirements for making web content more accessible to people with disabilities, including visual, auditory, physical, speech, cognitive, and neurological disabilities.

ARIA roles and attributes

Pre-requisites: None.

Total clock hours: 9

ARIA (Accessible Rich Internet Applications) is a set of attributes that can be added to HTML elements to provide additional information to assistive technologies, such as screen readers, to better understand the purpose and behavior of the elements.

Screen reader compatibility

Pre-requisites: None.

Total clock hours: 9

Screen reader compatibility refers to the ability of a website or application to be used with a screen reader, a software application that reads the text and other content on the screen to users who are blind or have low vision. Screen readers require accessibility information to be correctly implemented in a website or application to provide a usable experience to users.

WAD 1000 Project Development

Introduction to project development

Pre-requisites: None.

Total clock hours: 3

Project development in web application development involves a series of stages, including planning, design, coding, testing, and deployment. This process requires a team of developers, designers, and project managers to work together to ensure the project is completed on time, within budget, and to the satisfaction of the customer.

To ensure a successful project outcome, it is important to have a clear understanding of the project goals and requirements, as well as an effective project management plan in place. This may involve using tools such as agile methodologies, project management software, and version control systems to organize and manage the project effectively.

It is also important to have a solid understanding of the technology and tools used in web application development, as well as best practices for coding, testing, and deployment. With a strong foundation in these areas, web application

development teams can deliver high-quality web applications that meet the needs of the business and its users.

Agile Methodologies

Pre-requisites: None.

Total clock hours: 9

Agile is a project management approach that prioritizes flexibility and collaboration. Agile methodologies, such as Scrum and Kanban, provide a framework for managing web application development projects in an iterative and adaptive manner.

Scrum and Kanban

Pre-requisites: None.

Total clock hours: 9

Scrum and Kanban are two popular Agile methodologies used in web application development. Scrum is a framework that emphasizes collaboration, adaptability, and delivering value to the customer. Kanban, on the other hand, is a visual system for managing work items that emphasizes flow and continuous improvement.

Project management tools such as Trello or Asana

Pre-requisites: None.

Total clock hours: 9

Project management tools, such as Trello or Asana, are used to manage the work of web application development projects. These tools provide a way to track tasks, manage team communication, and monitor progress.

Version Control with Git

Pre-requisites: None.

Total clock hours: 9

Git is a popular version control system used by web application development

teams to manage code changes and collaborate on projects. It provides a way to track changes to code over time, collaborate with team members, and maintain different versions of the codebase.

Program Schedule (Sequence of Classes)

The **AI-Assisted Web Application Development** Program is scheduled to start on the First Monday of the Second Month of the Year – Last for about 22 Weeks.

All the classes are held at 380 N. First Street, 101A, San Jose CA 95110.

Morning: 9.00 AM – 12.00 PM

Course Number	Course Title	Module	Lecture Hours	Lab Hours	Week
WAD100	Introduction to Web Development	Overview of web development	6		Week#1
		Client-side vs server-side technologies	6	6	Week#1
		Web development tools and technologies	3	6	Week#2
WAD 200	HTML and CSS	Introduction to HTML	6	6	Week#2
		HTML tags and elements	3	3	Week#3
		CSS selectors and styles	3	3	Week#3
		Responsive design with CSS	3	3	Week#4
WAD 300	JavaScript	Introduction to JavaScript	3	3	Week#4
		Variables, functions, and control structures	3	3	Week#5

		Arrays, objects, and loops	3	3	Week#5
		DOM manipulation with JavaScript	3	3	Week#6
		Asynchronous programming with JavaScript	3	3	Week#6
WAD 400	Backend Web Development	Introduction to server-side technologies	3	3	Week#7
		Node.js and Express.js	3	3	Week#7
		RESTful API design	3	3	Week#8
		Database integration with MongoDB or MySQL	6	6	Week#8
WAD 500	Frontend Web Development Frameworks	Introduction to frontend frameworks	6	6	Week#9
		React.js	3	3	Week#10
		Angular.js	3	3	Week#10
		Vue.js	3	3	Week#11
		State management with Redux or Vuex.	3	3	Week#11
WAD 600	Deployment and Hosting	Introduction to cloud computing	3	3	Week#12
		Deploying web applications to platforms such as Heroku or AWS	3	6	Week#12
		Domain name registration and DNS configuration	3	6	Week#13

		SSL certificates and HTTPS	3	6	Week#13
WAD 700	Testing and Debugging	Introduction to testing and debugging.	3	3	Week#14
		Unit testing with Jest or Mocha	3	6	Week#15
		End-to-end testing with Cypress	3	6	Week#15
		Debugging with the browser console	3	6	Week#16
WAD 800	Security	Introduction to web application security	3	3	Week#16
		OWASP Top 10 security risks	3	3	Week#17
		Cross-Site Scripting (XSS)	3	3	Week#17
		Cross-Site Request Forgery (CSRF)	3	3	Week#17
		Encryption and decryption	3	3	Week#18
WAD 900	Web Accessibility	Introduction to web accessibility	3	3	Week#18
		WCAG 2.0 guidelines	3	6	Week#18
		ARIA roles and attributes	3	6	Week#19
		Screen reader compatibility	3	6	Week#19
WAD 1000	Project Development	Introduction to project development	3		Week#20
		Agile methodologies	3	6	Week#20
		Scrum and Kanban	3	6	Week#21
		Project management tools such as Trello or Asana	3	6	Week#21

		Version Control with Git	3	6	Week# 22
			144	177	
TOTAL			321		

Equipments, Books and Facilities

ITEM
Student Computers
Software Tools: Sublime Text, Notepad++, Atom, etc., Visual Studio Code, PyCharm, Eclipse, etc., React, Angular, Vue, etc., Django, Ruby on Rails, Express.js, etc., MySQL, MongoDB, PostgreSQL, etc., Git, SVN, Mercurial, etc., npm, yarn, pip, etc., Grunt, Gulp, Webpack, etc.

Textbooks and other required Materials

Books:

Learning Web App Development: Build Quickly with Proven JavaScript Techniques by Semmi Peruwal.

ISBN13- 978-1449370190

A PDF version of the book is given to all the students. All the classroom lecture materials are also provided to the students in three different fashions:

1. USB
2. Online access
3. Paperback (by request only)

Software (student will be given access to use these software):

1. Text Editor: Sublime Text, Notepad++, Atom, etc.

2. Development Environment: Visual Studio Code, PyCharm, Eclipse, etc.
3. Front-end Development Frameworks: React, Angular, Vue, etc.
4. Back-end Development Frameworks: Django, Ruby on Rails, Express.js, etc.
5. Database Management System: MySQL, MongoDB, PostgreSQL, etc.
6. Version Control System: Git, SVN, Mercurial, etc.
7. Package Managers: npm, yarn, pip, etc.
8. Task Runner: Grunt, Gulp, Webpack, etc.

AI Enhanced Digital Marketing Strategy and Analytics

Total Hours: 300

(22 Weeks)

Digital Marketing program is a certificate program that is designed to provide students with knowledge of an entry level position as a Digital marketing Professional. Digital marketing refers to the promotion of products or services using digital technologies, such as the internet, mobile phones, social media, search engines, and other digital channels. The goal of digital marketing is to reach a targeted audience and promote brand awareness, generate leads, and drive sales through various tactics, such as search engine optimization (SEO), pay-per-click advertising (PPC), social media marketing, email marketing, content marketing, and more. By using digital channels, businesses can gather data on customer behavior and use it to create personalized, data-driven marketing campaigns that provide a better experience for customers and drive better results for the business.

Learning Outcome:

Students with a skill set that would qualify them to be an entry-level **Digital marketing** professional. The student will attain **a comprehensive understanding of the following:**

1. Fundamentals of digital marketing: including online marketing channels, digital marketing strategies, and digital marketing metrics.
2. Search engine optimization (SEO): including keyword research, on-page optimization, and link building.

3. Pay-per-click advertising (PPC): including Google Ads and social media advertising.
4. Content marketing: including content creation, distribution, and promotion.
5. Social media marketing: including strategy, planning, and executing social media campaigns.
6. Email marketing: including email list building, email design, and email automation.
7. Mobile marketing: including mobile apps, SMS, and mobile web.
8. Web analytics: including tracking, reporting, and analysis of website traffic and conversion data.
9. E-commerce marketing: including shopping cart optimization, product listing ads, and retargeting.
10. Affiliate marketing: including affiliate program management, affiliate recruitment, and affiliate commission tracking.

**AI Enhanced Digital Marketing Strategy and Analytics
Program**

Total Hours: 300

Mode of Instruction: Virtual Live Instructor Driven.

Courses (“Modules”)	Instructional hours
Introduction to digital marketing	12
Search Engine Optimization (SEO)	36
Pay-Per-Click Advertising (PPC)	42
Social Media Marketing	24
Content Marketing	24

Email Marketing	24
Affiliate Marketing	24
Analytics and Reporting	36
Mobile Marketing	33
E-Commerce Marketing	45
Total	300

Program Syllabus

Course Number	Course Title	Module	Lecture Hours	Lab Hours
DMP100	Introduction to digital marketing	Overview of digital marketing	6	
		Importance of digital marketing	3	
		Digital marketing vs traditional marketing	3	
DMP 200	Search Engine Optimization (SEO)	Keyword research	3	6
		On-page optimization	3	6
		Off-page optimization	3	6
		Link building	3	6
DMP 300	Pay-Per-Click Advertising (PPC)	Google Ads	6	6
		Bing Ads	6	6
		Display advertising.	6	3
		Remarketing	6	3

DMP 400	ocial Media Marketing	Facebook advertising	3	3
		Instagram advertising	3	3
		LinkedIn advertising	3	3
		Twitter advertising	3	3
DMP 500	Content Marketing	Types of content	3	3
		Content creation	3	3
		Content promotion	3	3
		Content analysis	3	3
DMP 600	Email Marketing	Email list building	3	3
		Email campaign creation	3	3
		Email automation	3	3
		Email analytics	3	3
DMP 700	Affiliate Marketing	Overview of affiliate marketing	3	3
		Affiliate marketing strategies	3	3
		Affiliate network selection	3	3
		Commission structure	3	3
	Analytics and	Overview of Analytics and Reporting's	3	3

DMP 800	Reporting	Overview of web analytics	3	3
		Google Analytics	3	6
		Tracking conversions	3	3
		Analyzing website traffic	3	6
DMP 900	Mobile Marketing	Overview of mobile marketing	6	
		Mobile app advertising	3	6
		SMS marketing	3	6
		Mobile optimization	3	6
DMP 1000	E-Commerce Marketing	Overview of e-commerce marketing	3	
		Product listing optimization	3	3
		Shopping cart abandonment	3	3
		Customer acquisition	3	3
		Setting marketing goals	3	3
		Conducting a SWOT analysis	3	3
		Creating a digital marketing plan	3	3
		Measuring success.	3	3
TOTAL			300	

AI Enhanced Digital Marketing Strategy and Analytics

Total Hours: 300

DMP 100 - Introduction to digital marketing

Overview of digital marketing

Pre-requisites: None.

Total clock hours: 6

Overview of Digital Marketing: Digital marketing refers to the promotion of products, services, or brands through digital channels, such as search engines, social media, email, and websites. It uses a variety of online advertising techniques, such as search engine optimization (SEO), pay-per-click (PPC) advertising, and content marketing, to reach and engage with customers.

Importance of digital marketing

Pre-requisites: None.

Total clock hours: 3

Importance of Digital Marketing: In today's digital age, digital marketing is crucial for businesses of all sizes. It enables companies to reach a larger and more targeted audience, engage with customers in real-time, and measure the impact of their marketing efforts. Digital marketing also helps businesses to stay ahead of the competition by utilizing new and innovative techniques to reach customers.

Digital marketing vs traditional marketing

Pre-requisites: None.

Total clock hours: 3

Digital Marketing vs Traditional Marketing: Digital marketing differs from traditional marketing in several ways. Digital marketing allows for more precise targeting and measurement of campaigns, enables real-time engagement with customers, and offers a wider range of channels for reaching and engaging with customers. Traditional marketing, on the other hand, often relies on mass media

advertising, such as TV and print, and is less focused on direct engagement with customers.

DMP 200 - Search Engine Optimization (SEO)

Keyword research

Pre-requisites: None.

Total clock hours: 9

Search Engine Optimization (SEO): SEO is the process of optimizing a website to rank higher in search engine results pages (SERPs) and drive more organic traffic to a website.

Keyword Research: Keyword research is the first step in SEO. It involves finding and analyzing keywords related to a business's products or services to determine which keywords potential customers are searching for. This information is then used to optimize a website's content and meta data to improve its ranking in search engine results pages.

On-page optimization

Pre-requisites: None.

Total clock hours: 9

On-page Optimization: On-page optimization refers to the optimization of a website's content and meta data, such as title tags and headings, to improve its relevancy to search engines. This includes optimizing the website's content with target keywords, using descriptive and concise title tags and meta descriptions, and ensuring that the website is structured in a way that is easy for search engines to crawl.

Off-page optimization

Pre-requisites: None.

Total clock hours: 9

Off-page Optimization: Off-page optimization refers to the optimization of a

website's external factors that affect its ranking, such as the number and quality of inbound links. This includes building high-quality backlinks from reputable websites, participating in link exchanges, and engaging in social media marketing.

Link building

Pre-requisites: None.

Total clock hours: 9

Link Building: Link building is the process of acquiring inbound links to a website from other websites. This is important for SEO as search engines use links to determine the relevancy and authority of a website, and a higher number of high-quality inbound links can improve a website's ranking in search engine results pages. Link building can be done through a variety of methods, including guest blogging, creating high-quality content, and participating in link exchanges.

DMP 300 - Pay-Per-Click Advertising (PPC)

Google Ads

Pre-requisites: None.

Total clock hours: 12

Pay-Per-Click Advertising (PPC): PPC is a form of digital advertising where advertisers pay each time a user clicks on one of their ads. This type of advertising is typically used to drive traffic to a website and generate leads or sales.

Google Ads: Google Ads is Google's advertising platform that allows businesses to create and display text, display, and video ads on Google's search engine results pages, as well as other websites across the web. Advertisers can choose keywords to target and only pay when someone clicks on their ad.

Bing Ads

Pre-requisites: None.

Total clock hours: 12

Bing Ads: Bing Ads is Microsoft's advertising platform that allows businesses to

create and display text and display ads on Bing's search engine results pages and across its network of partner sites. Like Google Ads, advertisers can target keywords and pay per click.

Display advertising.

Pre-requisites: None.

Total clock hours: 9

Display Advertising: Display advertising refers to the use of visual ads, such as banner ads, to promote a product or service on websites. Display ads can appear on websites across the web, including social media platforms, and can be targeted to specific audiences based on demographic and geographic information.

Remarketing

Pre-requisites: None.

Total clock hours: 9

Remarketing: Remarketing is a type of display advertising that targets users who have previously visited a website or engaged with a business's ads. This allows businesses to display ads to users who are more likely to be interested in their products or services and to improve the effectiveness of their advertising campaigns.

DMP 400 - Social Media Marketing

Overview of social media platforms

Pre-requisites: None.

Total clock hours:

Social Media Marketing: Social media marketing is the process of promoting a product or service on social media platforms to reach a wider audience and drive engagement.

Overview of social media platforms: Social media platforms are online communities where users can share content, interact with each other, and

connect with businesses. Examples of popular social media platforms include Facebook, Instagram, LinkedIn, and Twitter.

Facebook advertising

Pre-requisites: None.

Total clock hours: 6

Facebook Advertising: Facebook advertising allows businesses to display ads on Facebook to reach a specific audience. Advertisers can target users based on demographic information, interests, and behaviors, and can choose from a variety of ad formats, including image, video, and carousel ads.

Instagram advertising

Pre-requisites: None.

Total clock hours: 6

Instagram Advertising: Instagram advertising allows businesses to display ads on Instagram to reach a specific audience. Advertisers can target users based on demographic information, interests, and behaviors, and can choose from a variety of ad formats, including image, video, and story ads.

LinkedIn advertising

Pre-requisites: None.

Total clock hours: 6

LinkedIn Advertising: LinkedIn advertising allows businesses to display ads on LinkedIn to reach a professional audience. Advertisers can target users based on job title, company size, and industry, and can choose from a variety of ad formats, including sponsored content and display ads.

Twitter advertising

Pre-requisites: None.

Total clock hours: 6

Twitter Advertising: Twitter advertising allows businesses to display ads on Twitter to reach a specific audience. Advertisers can target users based on demographic information, interests, and behaviors, and can choose from a variety of ad formats, including promoted tweets and promoted accounts.

DMP 500 - Content Marketing

Types of content

Pre-requisites: None.

Total clock hours: 6

Content Marketing: Content marketing is a strategic approach to marketing that focuses on creating and distributing valuable, relevant, and consistent content to attract and retain a clearly defined audience and ultimately drive profitable customer action.

Types of content: There are various types of content that can be used in content marketing, including blog posts, infographics, videos, eBooks, case studies, white papers, and more. The type of content that is best for a particular marketing campaign will depend on the goals of the campaign and the target audience.

Content creation

Pre-requisites: None.

Total clock hours: 6

Content Creation: Content creation is the process of developing and producing content for a content marketing campaign. This can include writing blog posts, creating videos, designing infographics, and more.

Content promotion

Pre-requisites: None.

Total clock hours: 6

Content Promotion: Content promotion is the process of distributing and

promoting content to reach a wider audience and drive engagement. This can include sharing content on social media, email marketing, and other promotional channels.

Content analysis

Pre-requisites: None.

Total clock hours: 6

Content Analysis: Content analysis is the process of evaluating the performance of content to determine its effectiveness and make data-driven decisions about future content marketing campaigns. This can include tracking metrics such as website traffic, engagement, and conversions.

DMP 600 - Email Marketing

Email list building

Pre-requisites: None.

Total clock hours: 6

Email Marketing: Email marketing is a form of digital marketing that involves sending promotional messages to a list of subscribers via email. It's an effective way to reach a targeted audience and drive engagement, conversions, and revenue.

Email List Building: Email list building is the process of acquiring email addresses from potential customers to build a targeted email marketing list. This can be done through various means, such as opt-in forms on a website, lead magnets, and more.

Email campaign creation

Pre-requisites: None.

Total clock hours: 6

Email Campaign Creation: Email campaign creation involves the development of an email marketing campaign, including the creation of emails, the selection of a

target audience, and the setting of campaign goals.

Email automation

Pre-requisites: None.

Total clock hours: 6

Email Automation: Email automation is the use of technology to automate repetitive tasks in an email marketing campaign, such as sending welcome emails, abandoned cart reminders, and more. It helps to increase efficiency and personalize the customer experience.

Email analytics

Pre-requisites: None.

Total clock hours: 6

Email Analytics: Email analytics is the process of measuring the performance of an email marketing campaign, including metrics such as open rates, click-through rates, conversions, and more. This data can be used to make data-driven decisions about future email marketing campaigns.

DMP 700 - Affiliate Marketing

Overview of affiliate marketing

Pre-requisites: None.

Total clock hours: 6

Affiliate Marketing: Affiliate marketing is a type of performance-based marketing where a business rewards affiliates for each customer brought about by the affiliate's own marketing efforts.

Overview of Affiliate Marketing: Affiliate marketing is a mutually beneficial relationship between a business and an affiliate, where the business offers products or services, and the affiliate promotes them to their audience. The affiliate earns a commission for each sale made because of their promotion.

Affiliate marketing strategies

Pre-requisites: None.

Total clock hours: 6

Affiliate Marketing Strategies: There are various strategies that can be used in affiliate marketing, including content marketing, influencer marketing, email marketing, and more. The best strategy will depend on the goals of the campaign and the target audience.

Affiliate network selection

Pre-requisites: None.

Total clock hours: 6

Affiliate Network Selection: Affiliate networks are third-party platforms that connect businesses with affiliates. When selecting an affiliate network, it's important to consider factors such as commission structure, payment terms, and available tools for tracking and analysis.

Commission structure

Pre-requisites: None.

Total clock hours: 6

Commission Structure: The commission structure in affiliate marketing refers to the compensation model for affiliates, which can include a flat fee per sale, a percentage of the sale, or a combination of the two. It's important to have a clear commission structure in place to ensure that affiliates are incentivized to promote the products or services effectively.

DMP 800 - Analytics and Reporting

Overview of Analytics and Reporting's

Pre-requisites: None.

Total clock hours: 6

Analytics and Reporting: Analytics and reporting refers to the measurement,

collection, analysis, and interpretation of data from various marketing efforts to gain insights into their performance and effectiveness.

Overview of web analytics

Pre-requisites: None.

Total clock hours: 6

Overview of Web Analytics: Web analytics is the measurement, collection, analysis, and reporting of internet data to understand and optimize website usage and user engagement.

Google Analytics

Pre-requisites: None.

Total clock hours: 9

Google Analytics: Google Analytics is a free web analytics service offered by Google that tracks and reports website traffic. It provides insights into website visitors, their behavior, and how they interact with a website, which can be used to improve the website's overall performance.

Tracking conversions

Pre-requisites: None.

Total clock hours: 6

Tracking Conversions: Conversion tracking refers to the process of measuring and analyzing the effectiveness of marketing efforts in terms of their ability to drive desired actions, such as sales, sign-ups, or downloads.

Analyzing website traffic

Pre-requisites: None.

Total clock hours: 9

Analyzing Website Traffic: Analyzing website traffic involves reviewing the data collected from web analytics tools to understand the behavior and characteristics

of website visitors, such as their location, referral sources, and engagement with the website's content. This information can be used to make informed decisions about website optimization and overall marketing strategy.

DMP 900 - Mobile Marketing

Overview of mobile marketing

Pre-requisites: None.

Total clock hours: 6

Mobile Marketing: Mobile marketing refers to the use of mobile devices, such as smartphones and tablets, to engage with consumers and promote products or services.

Overview of Mobile Marketing: Mobile marketing is a digital marketing strategy that focuses on reaching consumers through their mobile devices. It involves creating and distributing content, advertisements, and promotions specifically designed for mobile devices.

Mobile app advertising

Pre-requisites: None.

Total clock hours: 9

Mobile App Advertising: Mobile app advertising involves promoting a mobile app through various advertising channels, such as app stores, social media platforms, or in-app advertisements. The goal is to increase the app's visibility and downloads among potential users.

SMS marketing

Pre-requisites: None.

Total clock hours: 9

SMS Marketing: SMS marketing is a type of mobile marketing that involves sending promotional or informational text messages directly to consumers' mobile phones. It's a cost-effective way to reach many customers in a short

amount of time.

Mobile optimization

Pre-requisites: None.

Total clock hours: 9

Mobile Optimization: Mobile optimization refers to the process of making a website or digital content easily accessible and usable on mobile devices. This involves making changes to the website's design and functionality to ensure a smooth user experience on smaller screens and slower mobile networks.

DMP 1000 - E-Commerce Marketing

Overview of e-commerce marketing

Pre-requisites: None.

Total clock hours: 3

E-Commerce Marketing: E-commerce marketing refers to the marketing strategies and tactics used to promote products and services through online channels, such as e-commerce websites, mobile apps, and social media platforms.

Overview of E-Commerce Marketing: E-commerce marketing is a critical component of online sales and revenue. It involves a combination of digital marketing tactics, such as search engine optimization, social media marketing, and email marketing, to drive traffic and sales to an e-commerce website.

Product listing optimization

Pre-requisites: None.

Total clock hours: 6

Product Listing Optimization: Product listing optimization is the process of improving the visibility and relevance of a product listing on an e-commerce website. This includes optimizing product descriptions, images, and other details to rank higher in search engine results and attract more potential customers.

Shopping cart abandonment

Pre-requisites: None.

Total clock hours: 6

Shopping Cart Abandonment: Shopping cart abandonment refers to the phenomenon where a customer adds items to their online shopping cart but does not complete the purchase. E-commerce marketers aim to reduce shopping cart abandonment by creating a seamless and user-friendly shopping experience and using tactics such as email marketing and retargeting.

Customer acquisition

Pre-requisites: None.

Total clock hours: 6

Customer Acquisition: Customer acquisition refers to the process of acquiring new customers and converting them into paying customers. E-commerce marketers use various digital marketing tactics, such as search engine optimization, social media marketing, and email marketing, to attract and convert potential customers.

Digital Marketing Strategy

Pre-requisites: None.

Total clock hours: 6

Digital Marketing Strategy: A digital marketing strategy is a plan for using digital marketing tactics to achieve specific business goals and objectives. It involves setting marketing goals, conducting a SWOT analysis, and creating a detailed plan for executing various digital marketing tactics.

Setting marketing goals

Pre-requisites: None.

Total clock hours: 6

Setting Marketing Goals: Setting marketing goals involves identifying specific,

measurable, and achievable goals for a digital marketing campaign. These goals should be aligned with the overall business objectives and serve as a roadmap for the marketing team.

Conducting a SWOT analysis

Pre-requisites: None.

Total clock hours: 6

Conducting a SWOT Analysis: A SWOT analysis is a tool used to identify a company's strengths, weaknesses, opportunities, and threats. Conducting a SWOT analysis is a critical step in creating a digital marketing strategy and helps companies identify areas for improvement and opportunities for growth.

Creating a digital marketing plan

Pre-requisites: None.

Total clock hours: 6

Creating a Digital Marketing Plan: Creating a digital marketing plan involves identifying the specific tactics and budget needed to achieve the marketing goals set in the digital marketing strategy. The plan should also include a timeline and a mechanism for measuring success.

Measuring success.

Pre-requisites: None.

Total clock hours: 6

Measuring Success: Measuring success is a critical step in evaluating the effectiveness of a digital marketing campaign. This involves tracking key metrics, such as website traffic, conversion rates, and revenue, and using this data to continuously optimize and improve the campaign.

Program Schedule (Sequence of Classes)

The AI Enhanced Digital Marketing Strategy and Analytics Program is scheduled to start on the First Monday of the Second Month of the Year – Last for about 22 Weeks.

All the classes are held at 380 N. First Street, 101A, San Jose CA 95110.

Morning: 9.00 AM – 12.00 PM

Course Number	Course Title	Module	Lecture Hours	Lab Hours	Week
DMP100	Introduction to digital marketing	Overview of digital marketing	6		Week#1
		Importance of digital marketing	3		Week#1
		Digital marketing vs traditional marketing	3		Week#1
DMP 200	Search Engine Optimization (SEO)	Keyword research	3	6	Week#1
		On-page optimization	3	6	Week#2
		Off-page optimization	3	6	Week#2
		Link building	3	6	Week#3
DMP 300	Pay-Per-Click Advertising (PPC)	Google Ads	6	6	Week#3
		Bing Ads	6	6	Week#4
		Display advertising.	6	3	Week#4
		Remarketing	6	3	Week#5
DMP 400	Social Media Marketing	Facebook advertising	3	3	Week#5

		Instagram advertising	3	3	Week#5
		LinkedIn advertising	3	3	Week#6
		Twitter advertising	3	3	Week#6
DMP 500	Content Marketing	Types of content	3	3	Week#6
		Content creation	3	3	Week#7
		Content promotion	3	3	Week#7
		Content analysis	3	3	Week#7
DMP 600	Email Marketing	Email list building	3	3	Week#8
		Email campaign creation	3	3	Week#8
		Email automation	3	3	Week#8
		Email analytics	3	3	Week#9
DMP 700	Affiliate Marketing	Overview of affiliate marketing	3	3	Week#9
		Affiliate marketing strategies	3	3	Week#9
		Affiliate network selection	3	3	Week#10
		Commission structure	3	3	Week#10
DMP 800	Analytics and Reporting	Overview of Analytics and Reporting's	3	3	Week#10
		Overview of web analytics	3	3	Week#11

		Google Analytics	3	6	Week#11
		Tracking conversions	3	3	Week#12
		Analyzing website traffic	3	6	Week#12
DMP 900	Mobile Marketing	Overview of mobile marketing	6		Week#13
		Mobile app advertising	3	6	Week#14
		SMS marketing	3	6	Week#15
		Mobile optimization	3	6	Week#15
DMP 1000	E-Commerce Marketing	Overview of e-commerce marketing	3		Week#16
		Product listing optimization	3	3	Week#16
		Shopping cart abandonment	3	3	Week#17
		Customer acquisition	3	3	Week#17
		Setting marketing goals	3	3	Week#18
		Conducting a SWOT analysis	3	3	Week#19
		Creating a digital marketing plan	3	3	Week#19
		Measuring success.	3	3	Week#20
		TOTAL			300

equipment, Books and Facilities

ITEM
Student Computers
Software Tools: Google Analytics Tools, Facebook Analytics Tool, Bing analytics Tool Google Analytics, Hootsuite, SEMrush, Mailchimp, Canva, Ahrefs, Hubspot and Hotjar

Textbooks and other required Materials

Books:

Essentials of Digital Marketing, 17th Edition

ISBN10: 1260260372 | ISBN13: 9781260260373

By William Perreault, Joseph Cannon, and E. Jerome McCarthy

A PDF version of the book is given to all the students. All the classroom lecture materials are also provided to the students in three different fashions:

1. USB
2. Online access
3. Paperback (by request only)

Software (student will be given access to use these software):

1. Google Analytics Tools
2. Facebook Analytics Tool
3. Bing analytics Tool
4. Hootsuite
5. SEMrush
6. Mailchimp

7. Canva,
8. Ahrefs,
9. Hubspot
10. Hotjar

AI Infused Software Quality Assurance
Total Hours: 336
(22 Weeks)

Software Quality Assurance Automation program is a certificate program that is designed to provide students with knowledge of an entry level position as a Software Quality Assurance Automation engineer using Selenium Automation tool. Software Quality Assurance (SQA) Automation using Selenium is the process of using automated testing tools like Selenium WebDriver to test the functionality and performance of web applications. The main goal of SQA automation is to detect and prevent defects and issues in the software, thereby ensuring high-quality software releases. By using Selenium, test cases can be automated, reducing manual testing efforts, and increasing test coverage. Automated tests can be run multiple times, providing consistent and reliable results. The use of Selenium also enables testing in parallel, reducing the overall testing time and enabling quicker release cycles. In summary, SQA automation using Selenium helps in improving the quality of the software, reducing manual efforts, increasing testing efficiency and accuracy, and speeding up the software development process.

Learning Outcome:

Students with a skill set that would qualify them to be an entry-level **Software Quality Assurance Automation** professional using Selenium Automation tool. The student will attain knowledge to:

1. Understanding of automation testing concepts and frameworks.
2. Knowledge of automating functional and regression tests for web

applications.

3. Proficiency in writing test scripts using Selenium WebDriver.
4. Ability to implement various testing techniques like smoke testing, integration testing, etc.
5. Familiarity with integrating Selenium with other tools and technologies like Jenkins, JUnit, etc.
6. Improved testing efficiency and accuracy through automation.
7. Better understanding of software quality assurance and its importance

AI Infused Software Quality Assurance

Total Hours: 336

Mode of Instruction: Virtual Live Instructor Driven.

Courses (“Modules”)	Instructional hours
Introduction to Software Quality Assurance (SQA)	18
Introduction to Automation Testing	12
Introduction to Selenium	30
Basic Programming Concepts	39
Java Programming for Selenium	51
Web Application Testing with Selenium	51
TestNG Framework for Automation Testing	48
Selenium and Continuous Integration	24
Advanced Selenium Techniques	48

Best Practices for Automation Testing	15
Total	336

Program Syllabus

Course Number	Course Title	Module	Lecture Hours	Lab Hours
SQA100	Introduction to Software Quality Assurance (SQA)	Overview of SQA	3	
		Importance of SQA in software development	2	1
		Software testing methodologies	3	9
SQA 200	Introduction to Automation Testing	Overview of automation testing	3	
		Benefits of automation testing	2	1
		Types of automation testing	2	1
		Automation testing tools	2	1
SQA 300	Introduction to Selenium	Overview of Selenium	3	
		Selenium components	3	6
		Selenium WebDriver	3	6
		Selenium Grid	3	6
SQA 400	Basic Programming Concepts	Introduction to programming concepts	3	
		Data types and variables	3	6

		Conditional statements and loops	3	6
		Functions and methods	3	6
		Arrays and data structures	3	6
SQA 500	Java Programming for Selenium	Introduction to Java programming	3	3
		Data types and variables	3	6
		Conditional statements and loops	3	6
		Functions and methods	3	6
		Arrays and data structures	3	6
		Object-Oriented Programming (OOP) concepts	3	6
SQA 600	Web Application Testing with Selenium	Overview of web application testing	3	
		Element locators in Selenium	3	6
		Writing test cases with Selenium WebDriver	3	9
		Debugging and error handling	3	6
		Verifying page elements	3	6
		Data-driven testing with Selenium	3	6
SQA 700	TestNG Framework for Automation Testing	Introduction to TestNG	3	3
		Configuring TestNG with Selenium	3	9
		TestNG annotations and test case execution	3	9

		TestNG data providers and data-driven testing	3	9
		TestNG reporting and test result analysis.	3	3
SQA 800	Selenium and Continuous Integration	Introduction to continuous integration	3	3
		Configuring Selenium with Continuous Integration tools like Jenkins	3	3
		Scheduling and triggering automation test cases with Jenkins.	3	3
		Continuous integration reporting and analysis	3	3
SQA 900	Advanced Selenium Techniques	Advanced WebDriver techniques	3	9
		Advanced test case design and implementation	3	9
		Cross-browser testing with Selenium	3	9
		Performance and load testing with Selenium	3	9
SQA 1000	Best Practices for Automation Testing	Introduction to best practices for automation testing	2	1
		Test case design and maintenance	2	1
		Code quality and maintainability	2	1
		Debugging and error handling	2	1

		Automation testing strategy and planning	2	1
			129	207
TOTAL			336	

AI Infused Software Quality Assurance

Total Hours: 336

SQA 100 - Introduction to Software Quality Assurance (SQA)

Overview of SQA

Pre-requisites: None.

Total clock hours: 3

Software Quality Assurance (SQA) is a process that ensures that software products meet their specified requirements and are free from defects. SQA activities include creating a test plan, designing, and executing tests, and reporting defects to ensure that the software meets the necessary quality standards before it is released to the end-users. SQA is an integral part of the software development life cycle and involves collaboration between developers, testers, and stakeholders to ensure that the software is fit for its intended purpose.

Importance of SQA in software development

Pre-requisites: None.

Total clock hours: 3

Introduction to Improved Product Quality. SQA activities help identify and address defects early in the software development process, leading to a higher quality product. Increased User Satisfaction: SQA helps ensure that the software meets user requirements, which leads to higher customer satisfaction. Reduced Cost: Early detection and correction of defects through SQA activities can save time and

money by avoiding costly rework and reducing the need for post-release fixes. Better Collaboration: SQA fosters collaboration between developers, testers, and stakeholders, leading to improved communication and a more efficient development process. Improved Reputation: Delivering high-quality software enhances a company's reputation and can lead to increased business opportunities.

Overall, SQA is a critical component of the software development process, as it helps ensure that software products are reliable, functional, and meet the needs of end-users.

Software testing methodologies

Pre-requisites: None.

Total clock hours: 12

All the relevant SQA methodologies are discussed.

Unit Testing: Tests individual units or components of software to ensure they function correctly.

Integration Testing: Tests the interactions between multiple units or components to ensure they function correctly together.

System Testing: Tests the software as a whole system to ensure it meets the specified requirements.

Acceptance Testing: Tests the software to ensure it meets the needs of the end-users and is ready for deployment.

Regression Testing: Tests the software after changes have been made to ensure that new changes do not negatively impact existing functionality.

Performance Testing: Tests the software's performance under various conditions, such as high load or limited resources, to ensure it meets performance requirements.

Security Testing: Tests the software for vulnerabilities and security risks to ensure it is secure.

These are just some of the many software testing methodologies that may be used in the software development process, depending on the specific needs of the project and the software being developed.

SQA 200 - Introduction to Automation Testing

Overview of automation testing

Pre-requisites: None.

Total clock hours: 3

Introduction to Software Automation Testing. A method of testing software applications using automated tools and scripts, rather than manual testing processes. The goal of automation testing is to increase efficiency, reduce human error, and improve the speed and accuracy of testing.

Some common types of software automation testing include:

Unit Test Automation: Automates the testing of individual units or components of software to ensure they function correctly.

Functional Test Automation: Automates functional testing of software applications to ensure they meet the specified requirements.

Regression Test Automation: Automates regression testing to ensure that new changes do not negatively impact existing functionality.

Performance Test Automation: Automates performance testing to ensure that the software meets performance requirements under various conditions.

Security Test Automation: Automates security testing to identify and address vulnerabilities and security risks.

Automation testing can be performed using various tools and frameworks, such as Selenium, Appium, and TestNG. Automation testing is most useful for repetitive, time-consuming tasks and for tests that need to be run frequently, such as regression testing.

Overall, software automation testing is an important part of the software development process, as it helps improve the efficiency and accuracy of testing and can help ensure that software products meet their specified requirements and are of high quality.

Benefits of automation testing

Pre-requisites: None.

Total clock hours: 3

Increased Efficiency: Automation testing reduces the time and effort required for repetitive and time-consuming tasks, freeing up testers to focus on more complex and important tasks.

Improved Accuracy: Automation testing reduces the risk of human error and improves the accuracy of testing, resulting in fewer defects in the software.

Increased Test Coverage: Automation testing makes it possible to perform more tests in a shorter amount of time, resulting in improved test coverage and more comprehensive testing.

Faster Feedback: Automated tests can be run faster and more frequently than manual tests, providing faster feedback on the software's quality and helping to catch defects early in the development process.

Consistent Results: Automated tests produce consistent results, eliminating variability in results caused by different testers or manual testing methods.

Cost Savings: Automation testing can result in significant cost savings by reducing the time and resources required for manual testing and reducing the need for post-release fixes.

Improved Test Repeatability: Automated tests can be easily repeated, making it easier to detect and track changes in the software over time.

Overall, automation testing is a valuable tool for software development teams, as it helps improve the efficiency, accuracy, and comprehensiveness of testing, and can help ensure that software products meet their specified requirements and are of high quality.

Types of automation testing

Pre-requisites: None.

Total clock hours: 3

Unit Test Automation: Automates the testing of individual units or components of software to ensure they function correctly.

Functional Test Automation: Automates functional testing of software applications to ensure they meet the specified requirements.

Regression Test Automation: Automates regression testing to ensure that new changes do not negatively impact existing functionality.

Performance Test Automation: Automates performance testing to ensure that the software meets performance requirements under various conditions.

Security Test Automation: Automates security testing to identify and address vulnerabilities and security risks.

GUI Test Automation: Automates the testing of graphical user interfaces to ensure that they are functional and meet the specified requirements.

Integration Test Automation: Automates integration testing to ensure that multiple components or systems work correctly together.

Continuous Integration/Continuous Deployment (CI/CD) Test Automation: Automates the testing of software as part of a CI/CD pipeline to ensure that software can be deployed quickly and reliably.

These are just some of the many types of software automation testing, and the specific types used will depend on the needs of the software being developed and the goals of the testing process.

Automation testing tools

Pre-requisites: None.

Total clock hours: 3

Introduction to the most used SQA tools.

Selenium: An open-source tool for automating web browser testing.

Appium: An open-source tool for automating testing of mobile applications.

TestNG: A testing framework for Java that supports test automation and parallel testing.

JUnit: A testing framework for Java that supports test automation and the development of test-driven software.

Jenkins: An open-source tool for automating software builds, tests, and deployments.

HP Quicktest Professional (QTP): A commercial tool for automating functional testing of software applications.

IBM Rational Functional Tester (RFT): A commercial tool for automating functional

testing of software applications.

LoadRunner: A commercial tool for automating performance testing of software applications.

These are just a few of the many software automation testing tools available, and the specific tool used will depend on the needs of the software being developed, the programming language being used, and the goals of the testing process.

SQA 300 – Introduction to Selenium

Overview of Selenium

Pre-requisites: None.

Total clock hours: 3

Selenium is an open-source tool for automating web browser testing. It is used for testing web applications and can be used to perform a wide range of testing activities, including functional testing, regression testing, and performance testing.

Selenium provides a set of APIs and libraries that can be used to interact with web browsers and perform actions such as clicking buttons, entering text, and navigating pages. These actions can be automated and performed as part of a test script.

Selenium supports multiple programming languages, including Java, Python, C#, and Ruby, and can be used in combination with testing frameworks such as JUnit and TestNG.

Selenium is highly flexible and can be used to test web applications on a variety of platforms, including Windows, Mac, and Linux. It also supports multiple web browsers, including Chrome, Firefox, Internet Explorer, and Safari.

Overall, Selenium is a widely used tool for automating web browser testing and is valued for its flexibility, ease of use, and compatibility with a wide range of platforms and programming languages.

Selenium components

Pre-requisites: None.

Total clock hours: 9

Selenium WebDriver: This is the main component of Selenium and is used to interact with web browsers and perform actions such as clicking buttons, entering text, and navigating pages.

Selenium Grid: This component allows for parallel testing by distributing tests across multiple machines and web browsers.

Selenium IDE: This is a browser plug-in that provides a graphical user interface for creating, recording, and debugging test scripts.

Selenium Remote Control (RC): This component allows for testing of web applications from remote machines and supports a wide range of programming languages.

Selenium Library: This is a set of libraries and APIs that can be used to automate testing with Selenium.

These components work together to provide a comprehensive and flexible tool for automating web browser testing. The specific components used will depend on the needs of the software being tested and the goals of the testing process.

Selenium WebDriver

Pre-requisites: None.

Total clock hours: 9

Selenium WebDriver is a component of the Selenium suite of tools for automating web browser testing. It is used to interact with web browsers and perform actions such as clicking buttons, entering text, and navigating pages.

WebDriver provides a set of APIs that can be used to interact with web browsers in a platform- and language-independent way. This allows for the automation of testing on a wide range of platforms and with a variety of programming languages, including Java, Python, C#, and Ruby.

WebDriver operates at a lower level than other components of Selenium, such as Selenium IDE, and provides more direct access to the underlying functionality of web browsers. This makes WebDriver well suited for automating more complex testing scenarios, such as performance testing and security testing.

Overall, Selenium WebDriver is a highly flexible and widely used component of the Selenium suite of tools for automating web browser testing. It is valued for its compatibility with a wide range of platforms and programming languages, as well as its ability to automate a wide range of testing activities.

Selenium Grid

Pre-requisites: None.

Total clock hours: 9

Selenium Grid is a component of the Selenium suite of tools for automating web browser testing. It enables the parallel execution of tests across multiple machines and web browsers, allowing for faster and more efficient testing.

With Selenium Grid, tests can be run on multiple machines simultaneously, each with a different combination of operating system, web browser, and browser version. This allows for more comprehensive test coverage, as well as the ability to run tests in parallel to reduce the overall testing time.

Selenium Grid consists of two components: a hub, which acts as a central point for distributing tests, and nodes, which are the machines on which tests are executed. The hub and nodes communicate with each other using the Selenium Remote Control (RC) protocol, and tests can be executed on the nodes using a variety of programming languages and testing frameworks, such as JUnit and TestNG.

Overall, Selenium Grid is a valuable component of the Selenium suite of tools for automating web browser testing. It enables faster and more efficient testing by allowing for the parallel execution of tests across multiple machines and web browsers.

SQA 400 – Basic Programming Concepts

Introduction to programming concepts

Pre-requisites: None.

Total clock hours: 3

Programming concepts are the fundamental building blocks of computer programming and software development. Some of the key programming concepts include:

Variables: Variables are containers that store data values. They have a name and a data type, and the value stored in the variable can be changed at any time during the execution of a program.

Data Types: Data types specify the type of data that a variable can store, such as integers, floating-point numbers, characters, or strings. Different programming languages support different data types, and the data type of a variable determines the operations that can be performed on its stored value.

Operators: Operators are symbols used to perform operations on values, such as addition, subtraction, multiplication, and division. There are also comparison operators, such as equal to and greater than, which are used to compare values and make decisions in a program.

Control Structures: Control structures are blocks of code that control the flow of execution in a program. They include conditional statements, such as if-then-else, and loops, such as for and while, which allow for repetitive execution of a block of code.

Functions: Functions are blocks of code that perform a specific task and can be called multiple times from different places in a program. Functions can accept input arguments and return output values.

Arrays: Arrays are data structures that store a collection of values, each accessible by an index or key. They are useful for storing and processing large amounts of data.

Objects: Objects are instances of classes, which are user-defined data types that can contain variables and functions. Objects allow for the implementation of object-oriented programming, a programming paradigm that focuses on the manipulation of objects and their attributes and behaviors.

These concepts form the foundation of computer programming and software development, and a strong understanding of them is essential for building efficient, maintainable, and scalable software systems.

Data types and variables

Pre-requisites: None.

Total clock hours: 9

Data Types: Data types are a classification of data that determines the type of values that can be stored in a variable and the operations that can be performed on them. The most common data types in programming languages include:

Integer: Integer data type represents whole numbers, such as -1, 0, and 1.

Floating-point: Floating-point data type represents real numbers, such as 3.14, 1.0, and -1.5.

Boolean: Boolean data type represents binary values, either true or false.

Character: Character data type represents a single character, such as a letter, number, or symbol.

String: String data type represents a sequence of characters, such as "hello" or "goodbye".

Variables: Variables are names used to store values in a program. A variable must be declared with a specific data type, and the value stored in the variable can be changed during the execution of a program.

Conditional statements and loops

Pre-requisites: None.

Total clock hours: 9

Conditional statements are control structures that allow for the execution of different blocks of code based on certain conditions. The most common conditional statement is the "if" statement. In addition to the if statement, there are also "if-else" and "if-else if" statements, which provide alternative blocks of code to be executed if the condition is false.

Loops are control structures that allow for the repeated execution of a block of code. There are two types of loops: "for" loops and "while" loops.

A for loop is used when you know how many times you want to repeat a block of code.

A while loop is used when you don't know how many times you want to repeat a block of code.

In both for loops and while loops, it is important to include a way to update the loop control variable, or the loop will run forever and create an infinite loop.

Functions and methods

Pre-requisites: None.

Total clock hours: 9

Functions and methods are blocks of code that perform a specific task and can be called multiple times throughout a program. They allow for the reuse of code and the division of a program into smaller, more manageable pieces.

Methods are like functions, but they are associated with objects in object-oriented programming languages. The syntax for declaring a method in an object-oriented language is:

Functions and methods can accept parameters, which are values passed to the function or method when it is called, and can return values, which are the values calculated by the function or method.

Arrays and data structures

Pre-requisites: None.

Total clock hours: 9

An array is a data structure that stores a collection of elements, all the same data type, in contiguous memory locations. Each element in an array can be accessed by its index, which is a zero-based integer value.

A data structure is a way of organizing and storing data in a computer's memory so that it can be used efficiently. There are many types of data structures, including arrays, linked lists, stacks, queues, trees, and graphs.

Each data structure has its own strengths and weaknesses and is appropriate for different types of problems. For example, an array is a simple data structure that is fast for accessing elements by index but slow for inserting or deleting elements in the middle of the array. A linked list, on the other hand, is slow for accessing elements by index, but fast for inserting or deleting elements anywhere in the list. When designing a program, choosing the right data structure is important for

achieving good performance and making the code easier to understand and maintain.

SQA 500 – Java Programming for Selenium

Introduction to Java programming

Pre-requisites: None.

Total clock hours: 6

Introduction to Java Programming. Java is a high-level, object-oriented programming language developed by Sun Microsystems (now owned by Oracle) in the mid-1990s. Java is widely used for developing desktop, web, and mobile applications, as well as for building server-side systems and middleware.

Java is known for its "write once, run anywhere" (WORA) philosophy, which means that code written in Java can run on any platform that has a Java Virtual Machine (JVM) installed, without the need for recompilation.

The key features of Java are also discussed in detail - Object-Oriented, Memory Management, Type Safety, Multi-Threading.

How to get started with Java, you will need to install the Java Development Kit (JDK) and a text editor or integrated development environment (IDE) for writing and running Java code.

Data types and variables

Pre-requisites: None.

Total clock hours: 9

Introduction to data types and variables in Java Language. Java supports a variety of data types, which can be grouped into two categories: primitive data types and reference data types. Primitive Data Types: Boolean, byte, short, int, long, float, double and char are discussed in detail.

Reference Data Types: String, Object and Array

Variables:

Variables are used to store data in Java. Each variable has a type and a name, and

the type determines what kind of data the variable can hold. To declare a variable in Java, you use the following syntax:

Conditional statements and loops

Pre-requisites: None.

Total clock hours: 9

Conditional statements in Java allow you to execute a block of code only if a certain condition is true. The most common conditional statement in Java is the if statement:

Loops in Java allow you to execute a block of code repeatedly until a certain condition is met. There are two types of loops in Java: for loops and while loops. The while loop is used to execute a block of code repeatedly as long as a certain condition is true.

It's important to be careful when using loops, as it's possible to create an infinite loop if the condition is never false. To avoid this, you should make sure that the condition will eventually become false, either by updating the variables used in the condition or by using a break statement to exit the loop when the condition is met.

Functions and methods

Pre-requisites: None.

Total clock hours: 9

Functions and Methods in Java: In Java, functions and methods are similar constructs that allow you to write reusable code. A function is a group of statements that perform a specific task and can return a value. A method is a similar construct, but it is a member of a class and can be called on objects of that class.

Functions in Java: Java does not have a built-in concept of functions, but you can write functions by using a static method in a class.

Methods in Java: A method is a member of a class and can be called on objects of that class.

Arrays and data structures

Pre-requisites: None.

Total clock hours: 9

Arrays and Data Structures in Java:

Arrays in Java:

An array in Java is a collection of variables of the same data type. You can use arrays to store multiple values of the same type, such as integers, floating-point numbers, or strings.

Data Structures in Java:

Java provides several built-in data structures, such as arrays, linked lists, stacks, queues, and trees, that can be used to store and manipulate data. The most used data structures in Java are:

ArrayList: An array-based dynamic data structure that automatically adjusts its size as you add or remove elements.

LinkedList: A linked-list-based dynamic data structure that allows you to add or remove elements at the beginning or end of the list in constant time.

Stack: A data structure that follows the Last-In-First-Out (LIFO) principle, meaning that the last element added to the stack is the first one to be removed.

Queue: A data structure that follows the First-In-First-Out (FIFO) principle, meaning that the first element added to the queue is the first one to be removed.

Each of these data structures has its own set of methods for adding, removing, and manipulating elements, so you can choose the one that is most appropriate for your specific needs.

Object-Oriented Programming (OOP) concepts

Pre-requisites: None.

Total clock hours: 9

Object-Oriented Programming (OOP) is a programming paradigm that focuses on using objects and classes to model real-world objects and their interactions. Java is an object-oriented programming language that provides several features to support OOP, such as:

Classes: A class is a blueprint for creating objects (a particular data structure), providing initial values for state (member variables or instance variables), and implementations of behavior (member functions or methods).

Objects: An object is an instance of a class, created using the `new` operator. An object has its own state and behavior.

Inheritance: Inheritance is a mechanism for code reuse and allows you to define a new class that is a modified version of an existing class. The new class is called the derived class, and the existing class is called the base class.

Polymorphism: Polymorphism allows you to treat objects of different classes in the same way, even if they have different implementations. For example, you can define a method in a base class and then override it in derived classes.

Encapsulation: Encapsulation is the mechanism of hiding the internal details of an object and exposing only the necessary information to the outside world. This is achieved by using access modifiers such as `private` and `protected` to control the visibility of class members.

Abstraction: Abstraction is the process of hiding the implementation details of an object and exposing only the necessary information to the outside world. Java provides the `abstract` keyword to create abstract classes, which cannot be instantiated, and are used as base classes for other classes.

These concepts allow you to design, develop, and maintain complex software systems in a clear and organized manner.

SQA 600 – Web Application Testing with Selenium

Overview of web application testing

Pre-requisites: None.

Total clock hours: 3

Web Application Testing is the process of testing a web application to ensure that it meets its functional and non-functional requirements. It involves testing the application's user interface, functionality, performance, security, and compatibility with different browsers and devices. The main objective of web application testing is to identify and fix defects, improve user experience, and

deliver a high-quality product to the end-users.

The different types of web application testing include:

Functional Testing: This involves testing the functionality of the web application to ensure that it meets the business requirements.

Usability Testing: This involves testing the user interface and navigation of the web application to ensure that it is user-friendly and easy to use.

Performance Testing: This involves testing the response time, load time, and scalability of the web application to ensure that it performs well under different load conditions.

Security Testing: This involves testing the security of the web application to ensure that it is protected against attacks, such as cross-site scripting, SQL injection, and cross-site request forgery.

Compatibility Testing: This involves testing the compatibility of the web application with different browsers, devices, and operating systems to ensure that it works as expected on all platforms.

Web application testing can be performed manually or using automation tools, such as Selenium. It is an ongoing process that continues throughout the development life cycle to ensure that the web application meets the desired quality standards.

Element locators in Selenium

Pre-requisites: None.

Total clock hours: 9

Element locators are the key components in Selenium that are used to identify web elements on a web page. Selenium supports several element locators, including:

ID: The ID locator is used to identify an element based on its unique ID attribute. It is the most preferred way to locate elements as IDs are unique and always present.

Name: The name locator is used to identify an element based on its name attribute.

Class Name: The class name locator is used to identify an element based on its

class attribute. It can identify multiple elements with the same class name.

Tag Name: The tag name locator is used to identify an element based on its HTML tag name.

Link Text: The link text locator is used to identify a link based on its text. It is only applicable to anchor elements.

Partial Link Text: The partial link text locator is used to identify a link based on a portion of its text.

XPath: The XPath locator is used to identify an element based on its XML path.

XPath is a powerful locator that can traverse the HTML document and find elements based on their location, attribute values, and other conditions.

CSS Selector: The CSS selector locator is used to identify an element based on its CSS selector. CSS selectors are like XPath, but they are easier to read and write.

The choice of the element locator depends on the structure of the web page and the attributes of the web elements. The ID and name locators are preferred if they are available, as they are more reliable and faster than other locators. If the elements are dynamic or the attributes are not available, then other locators, such as XPath or CSS selector, can be used.

Writing test cases with Selenium WebDriver

Pre-requisites: None.

Total clock hours: 12

Writing test cases with Selenium WebDriver involves the following steps:

Import the required libraries: Start by importing the required libraries, such as the Selenium WebDriver and JUnit/TestNG, to write test cases in Java.

Launch the browser: Use the WebDriver API to launch the desired browser and navigate to the URL of the web application under test.

Locate the elements: Use the element locators to locate the web elements on the web page that need to be tested.

Perform actions: Use the WebDriver API to perform various actions on the web elements, such as clicking buttons, entering text, and selecting drop-down options.

Assertions: Use JUnit or TestNG assertions to verify the expected results. For

example, check if the correct page is displayed or if the correct text is displayed on the page.

Close the browser: Close the browser after completing the test case.

Debugging and error handling

Pre-requisites: None.

Total clock hours: 9

Debugging and Error Handling in Selenium:

Debugging and error handling are important aspects of software testing, especially in automation testing. In Selenium, debugging and error handling can be performed in several ways, including:

Logging: Use logging statements to print debug information, such as the values of variables and the status of the test cases, to the console or a log file.

Breakpoints: Use breakpoints in the code to pause the execution of the test cases at specific points. This allows you to inspect the values of variables and the state of the application.

Exception Handling: Use exception handling to catch and handle exceptions that occur during the execution of the test cases. Exceptions can be caused by various factors, such as network issues, elements not found, and invalid inputs.

Screen Captures: Use screen captures to capture screenshots of the web pages during the test case execution. This can be helpful in analyzing the test case failures and understanding the context of the error.

Assertions: Use assertions to verify the expected results and report errors if the actual results do not match the expected results.

WebDriver Expected Conditions: Use the WebDriver Expected Conditions class to wait for a specific condition to be met before executing the next step. This can be helpful in handling dynamic web pages and avoiding race conditions.

By using these techniques, you can debug and handle errors effectively and make your test cases more robust and reliable.

Verifying page elements

Pre-requisites: None.

Total clock hours: 9

Verifying page elements

Verifying page elements in Selenium involves checking if the web page contains the expected elements and their attributes. This can be performed using the following methods:

Element Locators: Use the element locators, such as ID, class name, tag name, and XPath, to locate the web elements on the web page.

Assertions: Use assertions to verify the expected results and report errors if the actual results do not match the expected results.

By verifying page elements, you can ensure that the web page contains the expected elements and their attributes and make your test cases more robust and reliable.

Data-driven testing with Selenium

Pre-requisites: None.

Total clock hours: 9

Data-driven testing is a software testing technique in which the test cases are executed multiple times with different input data. In Selenium, data-driven testing can be performed in several ways, including:

Reading data from external files: You can read data from external files, such as CSV or Excel files, and use it as input data in your test cases.

Using Data Providers: You can use data providers to pass the input data to the test cases. Data providers are methods that return the input data in a specific format.

Using TestNG Parameterization: You can use TestNG Parameterization to pass the input data to the test cases. TestNG is a testing framework for Java, and it provides support for parameterized tests.

Using JUnit Parameterized Tests: You can use JUnit Parameterized Tests to pass the input data to the test cases. JUnit is a popular testing framework for Java, and it provides support for parameterized tests.

By using data-driven testing, you can test the application with multiple input data

and ensure that it works as expected with different inputs. This can increase the test coverage and make the test cases more robust and reliable.

SQA 700 – TestNG Framework for Automation Testing

Introduction to TestNG

Pre-requisites: None.

Total clock hours: 6

TestNG is a testing framework for the Java programming language. It provides support for various testing features, such as:

Test Case Execution: TestNG enables you to execute test cases and provides methods to manage test case execution, such as `beforeMethod()`, `afterMethod()`, and `test()`.

Test Suites: TestNG enables you to organize test cases into test suites and provides methods to manage test suites, such as `suite()`, `include()`, and `exclude()`.

Test Groups: TestNG enables you to group test cases into test groups and provides methods to manage test groups, such as `groups()`, and `excludeGroups()`.

Data-Driven Testing: TestNG provides support for data-driven testing using Data Providers and Parameterized Tests.

Reporting: TestNG provides detailed reporting of test case execution, including test case pass/fail status, execution time, and any errors or exceptions.

Assertions: TestNG provides support for assertions to verify the expected results and report errors if the actual results do not match the expected results.

Annotations: TestNG provides support for annotations to manage the execution of test cases and test suites, such as `@Test`, `@BeforeMethod`, and

@AfterMethod.

TestNG is a widely used testing framework for Java and provides a rich set of features for testing applications. It is widely used for functional integration, and end-to-end testing of web applications and services.

Configuring TestNG with Selenium

Pre-requisites: None.

Total clock hours: 12

Install TestNG: You can install TestNG by downloading the latest version of the TestNG jar file and adding it to your project build path.

Create a Java project: You can create a Java project in an Integrated Development Environment (IDE) such as Eclipse or IntelliJ.

Add Selenium and TestNG to your project: You can add Selenium and TestNG to your project by downloading the Selenium jar file and adding it to your project build path.

Create a TestNG test class: You can create a TestNG test class by annotating it with the @Test and @BeforeMethod annotations. The @Test annotation marks a method as a test method, and the @BeforeMethod annotation marks a method that will be executed before each test method.

Write your test cases: You can write your test cases by using the Selenium WebDriver API and the TestNG framework.

Run the tests: You can run the tests by right-clicking on the test class and selecting the "Run as TestNG Test" option.

View the test results: You can view the test results by using the TestNG Report, which displays the test case pass/fail status, execution time, and any errors or

exceptions.

By configuring TestNG with Selenium, you can use the powerful features of the TestNG framework to manage and execute your test cases and generate detailed reports of test execution. This makes it easier to manage and maintain your tests and ensures that they are reliable and accurate.

TestNG annotations and test case execution

Pre-requisites: None.

Total clock hours: 12

TestNG annotations are special tags used to define the behavior of test methods in TestNG. Some of the most used annotations in TestNG are:

@Test: This annotation marks a method as a test method, and it specifies the test case that will be executed.

@BeforeMethod: This annotation marks a method that will be executed before each test method.

@AfterMethod: This annotation marks a method that will be executed after each test method.

@BeforeClass: This annotation marks a method that will be executed before the first test method in a class.

@AfterClass: This annotation marks a method that will be executed after the last test method in a class.

@BeforeTest: This annotation marks a method that will be executed before all test methods in a test suite.

@AfterTest: This annotation marks a method that will be executed after all test

methods in a test suite.

To execute test cases in TestNG, you need to follow these steps:

Write your test cases: You can write your test cases by using the Selenium WebDriver API and the TestNG framework.

Annotate your test methods: You can annotate your test methods with the `@Test` annotation to specify which methods are test methods.

Run the tests: You can run the tests by right-clicking on the test class and selecting the "Run as TestNG Test" option.

View the test results: You can view the test results by using the TestNG Report, which displays the test case pass/fail status, execution time, and any errors or exceptions.

By using TestNG annotations, you can control the behavior of your test methods and specify the order in which they will be executed. This makes it easier to manage and maintain your tests and ensures that they are reliable and accurate.

TestNG data providers and data-driven testing

Pre-requisites: None.

Total clock hours: 12

TestNG data providers are a way to pass data to test methods in TestNG. They are useful for performing data-driven testing, where you want to run the same test method multiple times with different data sets.

A data provider is a method that returns an array of objects, where each object represents a set of test data. The data provider method is annotated with the `@DataProvider` annotation.

To use a data provider in TestNG, you need to do the following:

Write a data provider method: You can write a data provider method that returns an array of test data. This method must be annotated with the `@DataProvider` annotation.

Annotate your test method: You can annotate your test method with the `@Test` annotation and specify the name of the data provider. This tells TestNG which test method to run with which data set.

Run the tests: You can run the tests by right-clicking on the test class and selecting the "Run as TestNG Test" option.

View the test results: You can view the test results by using the TestNG Report, which displays the test case pass/fail status, execution time, and any errors or exceptions.

Data-driven testing with TestNG makes it easy to run the same test method multiple times with different data sets. This helps to ensure that your application is working correctly and is robust enough to handle different types of input. It also makes it easier to maintain your tests as you can add or remove test data without having to change the test method.

TestNG reporting and test result analysis.

Pre-requisites: None.

Total clock hours: 6

TestNG provides built-in reporting capabilities to help you analyze the results of your tests. The reports provide detailed information about the tests that were run, including the test cases that passed, failed, or were skipped.

The following are some of the key features of TestNG reporting:

TestNG Report: The TestNG Report is an HTML report that provides a summary of the test results. It displays the test case pass/fail status, execution time, and any errors or exceptions.

XSLT Report: The XSLT Report is a customizable report that can be generated from the TestNG report. You can use this report to generate customized reports that can be used for different purposes.

Logs: TestNG provides logs that can be used to debug test failures. The logs include information about the test cases that were run, the test methods that were executed, and any errors or exceptions that were encountered.

Test Result Analysis: You can analyze the test results by using the TestNG Report and the XSLT Report. This can help you to identify trends, such as which tests are failing more frequently, and to identify areas of the application that need improvement.

Test Execution Status: You can also use the TestNG Report to check the status of each test execution. This can help you to identify any tests that have failed and to determine the cause of the failure.

In conclusion, TestNG reporting, and test result analysis is an important part of software testing. It helps you to identify trends, check the status of each test execution, and analyze the test results to identify areas for improvement. This can ultimately lead to better quality software and a more efficient testing process.

SQA 800 – Selenium and Continuous Integration

Introduction to continuous integration

Pre-requisites: None.

Total clock hours: 6

Continuous Integration (CI) is a software development practice that involves

frequently integrating code changes into a shared repository, automatically building, and testing the application, and providing feedback to developers. The goal of CI is to catch and fix integration problems as early as possible before they become critical issues. It also helps ensure that the codebase remains in a working state, making it easier for developers to collaborate and make changes. In the context of Selenium, continuous integration involves setting up an automated process to run Selenium tests every time code changes are committed to the repository. This allows developers to detect and fix any issues before they make it into production, improving the overall quality of the application. CI tools, such as Jenkins, Travis CI, and CircleCI, can be used to automate the build and test process for Selenium tests. These tools integrate with Selenium WebDriver and TestNG to provide continuous feedback to developers on the health of the codebase.

In conclusion, continuous integration is an essential practice for ensuring the quality of software applications. By automating the build and test process, developers can catch and fix integration problems as early as possible, resulting in better quality software and a more efficient development process.

Configuring Selenium with Continuous Integration tools like Jenkins

Pre-requisites: None.

Total clock hours: 6

Configuring Selenium with Continuous Integration (CI) tools like Jenkins involves setting up an automated process to run Selenium tests every time code changes are committed to the repository. Here are the high-level steps to configure Selenium with Jenkins:

Install Jenkins: Jenkins can be installed on a local machine or on a server, depending on the needs of your organization.

Create a new job: Once Jenkins is installed, create a new job by clicking on the "New Item" button in the Jenkins dashboard. Give the job a name, such as

"Selenium Tests" and select "Freestyle project" as the type of job.

Configure the source code management: In the "Source Code Management" section, specify the location of your code repository, such as GitHub or Bitbucket, and provide the credentials to access the repository.

Add a build step: In the "Build" section, add a build step to run the Selenium tests. You can use a shell script or a command line tool, such as Maven, to run the tests.

Trigger the build: Once the job is configured, you can trigger a build by clicking on the "Build Now" button in the Jenkins dashboard. The build will check out the code from the repository, run the tests, and provide feedback on the build status.

Set up automatic builds: To automatically run the tests every time code changes are committed to the repository, go to the "Build Triggers" section, and select "Poll SCM". Provide the schedule for polling the repository, such as "H/15 * * * * *" to check for changes every 15 minutes.

Review the build results: After the build is completed, you can view the build results, including the test results, in the Jenkins dashboard.

In conclusion, configuring Selenium with Jenkins involves setting up a new job in Jenkins, specifying the location of the code repository, and adding a build step to run the tests. Once the job is set up, you can trigger builds manually or automatically, and view the build results in the Jenkins dashboard.

Scheduling and triggering automation test cases with Jenkins.

Pre-requisites: None.

Total clock hours: 6

Scheduling and triggering automation test cases with Jenkins involves integrating Selenium with the Jenkins CI tool. This integration enables the automatic execution of Selenium test cases as part of the build process in Jenkins. The test cases can be triggered at specific intervals, such as daily or weekly, or they can be

triggered after every code change. This way, the software quality can be assured with every code change, and the development team can identify and fix any issues quickly. Additionally, Jenkins provides detailed reports and test results analysis, making it easier to track and monitor the automation testing process.

Continuous integration reporting and analysis

Pre-requisites: None.

Total clock hours: 6

Continuous integration reporting and analysis in Selenium involves generating and analyzing reports of the automation test results that are executed as part of the CI process. These reports provide valuable information about the software quality, such as the number of test cases executed, the number of test cases passed or failed, and the execution time of each test case. This information helps the development team to identify and fix any issues quickly and track the software quality over time. Jenkins, for example, provides detailed test reports and result analysis that can be easily viewed from its web interface. Additionally, the integration of Selenium with CI tools like Jenkins also enables the creation of automated test reports, which can be shared with stakeholders for review and decision making.

SQA 900 – Advanced Selenium Techniques

Advanced WebDriver techniques

Pre-requisites: None.

Total clock hours: 12

Advanced WebDriver techniques in Selenium refer to advanced techniques for using the Selenium WebDriver API to automate web application testing. Some of these techniques include:

Page Object Model (POM): A design pattern used to create a separate layer for the test code and the page elements, making the code more maintainable and

scalable.

Handling pop-ups and alerts: Techniques for handling and interacting with pop-ups and alerts in a web application.

Handling dynamic web elements: Techniques for identifying and interacting with dynamic web elements that change dynamically based on user interactions or data.

Synchronization techniques: Techniques for synchronizing the test code with the web page to handle page load times, AJAX calls, and other dynamic elements.

Using WebDriver with JavaScript: Techniques for integrating Selenium WebDriver with JavaScript to automate complex interactions and automate testing of JavaScript-based applications.

Parallel testing: Techniques for running multiple test cases in parallel, improving the efficiency and speed of the testing process.

Cross-browser testing: Techniques for testing the application on multiple browsers to ensure compatibility and functionality.

By utilizing these advanced techniques, the automation testing process can be more efficient and effective, leading to better software quality and a faster time-to-market.

Advanced test case design and implementation

Pre-réquisits: None.

Total clock hours:12

Advanced test case design and implementation refers to the development of advanced and comprehensive test cases for a software application. Some of the key elements of advanced test case design and implementation include:

Risk-based testing: Testing the most critical and complex areas of the application first, reducing the risk of defects and improving the overall software quality.

Test data management: Creating and managing a large volume of test data to ensure that the test cases accurately represent the various use cases and scenarios.

Test case optimization: Optimizing the test cases to ensure that they are efficient, easy to maintain, and scalable.

Test automation frameworks: Developing and implementing a test automation framework that supports the design and execution of test cases.

Test case documentation: Detailed documentation of test cases, including test conditions, expected results, and test data, to ensure that the test cases are easily understandable and maintainable.

Test case traceability: Tracking the relationship between test cases, requirements, and defects to ensure that the testing process is closely tied to the development process and that any defects can be quickly identified and resolved.

By implementing these advanced test case design and implementation techniques, the testing process can be more effective, efficient, and comprehensive, leading to higher software quality and a faster time-to-market.

Cross-browser testing with Selenium

Pre-requisites: None.

Total clock hours: 12

Introduction to cross-browser testing using Selenium. Cross-browser testing refers to the process of checking the functionality of a website or web application on multiple web browsers to ensure compatibility and optimal performance on all platforms. Selenium is an open-source tool that automates web browsers and can be used for cross-browser testing. With Selenium, developers can write test

scripts in multiple programming languages, such as Java, Python, C#, etc., and execute them on different web browsers, including Chrome, Firefox, Safari, Edge, etc. Cross-browser testing with Selenium can help catch compatibility issues early in the development cycle and ensure a smooth user experience for all users.

Performance and load testing with Selenium

Pre-requisites: None.

Total clock hours: 12

Performance and load testing with Selenium refers to the process of evaluating the performance and scalability of a web application by simulating real-world usage conditions and measuring the application's response time, resource utilization, and stability. The purpose of performance and load testing is to identify and resolve any bottlenecks or issues that may negatively impact the user experience or cause the application to crash under heavy load.

The process of performance and load testing with Selenium involves the following steps:

Setting up the test environment: Setting up the necessary hardware, software, and network infrastructure to simulate real-world usage conditions.

Defining performance goals and test scenarios: Defining performance goals and test scenarios that accurately reflect the expected usage patterns of the application.

Writing test cases: Writing test cases that simulate the desired load and usage conditions and measure the application's response time and resource utilization.

Executing test cases: Executing the test cases using Selenium to simulate the desired load and usage conditions.

Analyzing test results: Analyzing the test results to identify bottlenecks and

performance issues and evaluate the application's scalability and stability.

Debugging and fixing issues: Debugging and fixing any issues that are identified during the testing process to improve the performance and scalability of the application.

Performance and load testing with Selenium can help to ensure that the web application can handle the expected load and usage conditions, improving its overall quality and reliability. It also helps to identify and resolve any performance or scalability issues early in the development process, reducing the risk of downtime or user dissatisfaction.

SQA 1000 – Best Practices for Automation Testing

Introduction to best practices for automation testing

Pre-requisites: None.

Total clock hours: 3

Best practices for automation testing are a set of guidelines and techniques that help to improve the quality, efficiency, and maintainability of automation testing efforts. Some of the key best practices for automation testing include:

Test-Driven Development (TDD): Writing automated tests before writing the code to be tested, ensuring that the code is thoroughly tested before it is deployed to production.

Continuous Integration (CI): Integrating automated tests into the software development process, allowing developers to catch and resolve issues early and continuously.

Modular Design: Designing tests to be modular, reusable, and scalable, reducing the time and effort required to maintain and update the test suite.

Maintaining Test Data: Maintaining test data in a centralized and easily accessible repository, allowing for efficient test case execution, and debugging.

Code Review: Regularly reviewing test code and scripts to identify and correct any issues, improving the quality and reliability of the test suite.

Test Environment: Maintaining a consistent and stable test environment, reducing the risk of false negatives and false positives in the test results.

Automated Test Maintenance: Regularly updating and maintaining the automated test suite, ensuring that it stays current and relevant with changes in the software.

Metrics and Reporting: Regularly monitoring and analyzing automation test metrics, such as test pass/fail rates, test execution time, and code coverage, to track progress and identify areas for improvement.

Following these best practices can help to ensure that automation testing efforts are effective, efficient, and maintainable, leading to improved software quality, reduced development time, and lower costs.

Test case design and maintenance

Pre-requisites: None.

Total clock hours: 3

Test case design and maintenance is a crucial aspect of software automation testing. It involves creating test cases that accurately represent the desired functionality and behavior of the software, and updating and refining those test cases over time as the software evolves. Good test case design should consider the desired level of coverage, test performance, and ease of maintenance. Effective maintenance of test cases requires regular review, update, and refinement to ensure that they continue to accurately reflect the software's functionality and behavior. Proper test case design and maintenance helps ensure

the reliability and effectiveness of the testing process and contributes to the overall quality and success of the software.

Code quality and maintainability

Pre-requisites: None.

Total clock hours: 3

Code quality and maintainability are important considerations in software development, including automation testing. Code quality refers to the level of technical excellence and reliability of the code, while maintainability refers to the ease with which the code can be modified, updated, and extended over time. High-quality code is typically well-structured, readable, and modular, with clear and concise documentation. Maintainable code is easily understandable, flexible, and scalable, making it easier for developers to modify and update it as needed. In automation testing, code quality and maintainability are critical for ensuring that test cases can be updated and maintained over time, without introducing new bugs or breaking existing tests. Poorly written test code can be difficult to modify, debug, and maintain, leading to time-consuming and costly maintenance efforts. To ensure code quality and maintainability in automation testing, it is important to follow best practices, such as using clear and concise coding standards, writing modular and reusable code, and including detailed documentation. Additionally, it is important to regularly review and refactor the test code to improve its quality and maintainability over time.

Debugging and error handling

Pre-requisites: None.

Total clock hours: 3

Debugging and error handling are important aspects of software development, including automation testing. Debugging is the process of finding and fixing errors or bugs in code. Error handling is the process of anticipating and dealing with potential problems or errors that may occur when the software is running. In automation testing, debugging and error handling are critical for ensuring that

test cases run smoothly and provide accurate results. Poorly written test cases that do not include proper error handling can result in unexpected behavior, incorrect results, and test failures. To improve debugging and error handling in automation testing, it is important to follow best practices, such as writing clear and concise code, using logging and debugging tools, and including detailed error messages and stack traces.

It is also important to use structured and well-defined error handling mechanisms, such as try-catch blocks, to anticipate and handle potential errors and exceptions. This helps to ensure that tests continue to run and complete, even if unexpected errors occur, and that the results of the tests are still accurate and meaningful.

Automation testing strategy and planning

Pre-requisites: None.

Total clock hours: 3

Automation testing strategy and planning are important steps in the software development process, particularly when it comes to automation testing. A well-defined automation testing strategy helps to ensure that the tests are efficient, effective, and provide accurate results. The following are key considerations when creating an automation testing strategy:

Test Coverage: Determine which test cases are suitable for automation and prioritize them based on their importance and potential impact.

Test Environment: Ensure that the test environment is set up correctly, including the proper configuration of software and hardware, and that it is properly maintained and updated.

Test Automation Tools: Choose the appropriate automation testing tools based on the specific needs of the project and the requirements of the tests.

Test Data: Plan for the creation and management of test data, including the development of test data generators, and ensure that test data is stored and managed in a secure and controlled manner.

Test Maintenance: Plan for ongoing maintenance of the automation tests, including updating tests as new features are added, fixing bugs, and making other improvements as necessary.

Test Metrics: Define and track key metrics, such as test execution time, test case pass/fail rates, and code coverage, to evaluate the effectiveness of the automation testing efforts.

Test Scheduling: Plan for the scheduling and execution of tests, including the frequency of test runs and the methods used to trigger test execution.

Having a well-defined automation testing strategy and plan in place helps to ensure that tests are executed efficiently, effectively, and provide accurate results. This, in turn, helps to improve the overall quality of the software and reduce the risk of defects or errors being introduced into the code.

Program Schedule (Sequence of Classes)

The AI Infused Software Quality Assurance Program is scheduled to start on the First Monday of the Second Month of the Year – Last for about 22 Weeks.

All the classes are held at 380 N. First Street, 101A, San Jose CA 95110.

Morning: 9.00 AM – 12.00 PM

Course Number	Course Title	Module	Lecture Hours	Lab Hours	Week
SQA100	Introduction to Software Quality Assurance (SQA)	Overview of SQA	3		Week#1
		Importance of SQA in software development	2	1	Week#1

		Software testing methodologies	3	9	Week#1
SQA 200	Introduction to Automation Testing	Overview of automation testing	3		Week#2
		Benefits of automation testing	2	1	Week#2
		Types of automation testing	2	1	Week#2
		Automation testing tools	2	1	Week#2
SQA 300	Introduction to Selenium	Overview of Selenium	3		Week#3
		Selenium components	3	6	Week#3
		Selenium WebDriver	3	6	Week#4
		Selenium Grid	3	6	Week#4
SQA 400	Basic Programming Concepts	Introduction to programming concepts	3		Week#4
		Data types and variables	3	6	Week#5
		Conditional statements and loops	3	6	Week#5
		Functions and methods	3	6	Week#6
		Arrays and data structures	3	6	Week#7
SQA 500	Java Programming for Selenium	Introduction to Java programming	3	3	Week#7

		Data types and variables	3	6	Week#8
		Conditional statements and loops	3	6	Week#8
		Functions and methods	3	6	Week#9
		Arrays and data structures	3	6	Week#9
		Object-Oriented Programming (OOP) concepts	3	6	Week#10
SQA 600	Web Application Testing with Selenium	Overview of web application testing	3		Week#11
		Element locators in Selenium	3	6	Week#11
		Writing test cases with Selenium WebDriver	3	9	Week#12
		Debugging and error handling	3	6	Week#12
		Verifying page elements	3	6	Week#13
		Data-driven testing with Selenium	3	6	Week#13
SQA 700	TestNG Framework for Automation Testing	Introduction to TestNG	3	3	Week#14
		Configuring TestNG with Selenium	3	9	Week#14
		TestNG annotations and test case execution	3	9	Week#15
		TestNG data providers and data-	3	9	Week#15

		driven testing			
		TestNG reporting and test result analysis.	3	3	Week#16
SQA 800	Selenium and Continuous Integration	Introduction to continuous integration	3	3	Week#16
		Configuring Selenium with Continuous Integration tools like Jenkins	3	3	Week#17
		Scheduling and triggering automation test cases with Jenkins.	3	3	Week#17
		Continuous integration reporting and analysis	3	3	Week#17
SQA 900	Advanced Selenium Techniques	Advanced WebDriver techniques	3	9	Week#18
		Advanced test case design and implementation	3	9	Week#19
		Cross-browser testing with Selenium	3	9	Week#19
		Performance and load testing with Selenium	3	9	Week#20
SQA 1000	Best Practices for Automation Testing	Introduction to best practices for automation testing	2	1	Week#21

		Test case design and maintenance	2	1	Week#21
		Code quality and maintainability	2	1	Week#21
		Debugging and error handling	2	1	Week#21
		Automation testing strategy and planning	2	1	Week#22
			129	207	
		TOTAL		336	

equipment, Books and Facilities

ITEM
Student Computers
Software Tools: Selenium, Git and GitHub, Jenkins and WebServers

Textbooks and other required Materials

Books:

Selenium WebDriver 3 Practical Guide: End-to-end automation testing for web and mobile browsers with Selenium WebDriver by Unmesh Gundecha, Satya Avasarala.

ISBN-13: 9781788999762

A PDF version of the book is given to all the students. All the classroom lecture materials are also provided to the students in three different fashions:

1. USB
2. Online access

3. Paperback (by request only)

Software (student will be given access to use these software):

1. Selenium
2. Git and GitHub
3. Jenkins
4. Web Servers

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this institution will meet your educational goals. This may include contacting an institution to which you may seek to transfer after attending CICD to determine if your certificate will transfer.