Dar Al Uloom University
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ARCHITECTURE PROGRAM REPORT

The Program of Architecture at Dar Al Uloom University

Submitted to the National Architectural Accrediting Board (NAAB) for the Substantial Equivalency of the Architecture Program

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June 2015 (revised March, 2016)

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ABBREVIATIONS:

Dar Al Uloom University	DAU
College of Architectural Engineering and Digital Design	CADD
Committee of Program Development and Accreditation	CPAD
Architectural Program	ARCH
Interior Design	IDE
Graphic Design	GDE
National Architectural Accrediting Board	NAAB
Kingdom of Saudi Arabia	KSA
Ministry of Higher Education	MOHE

PART I

1. Introduction

1.1. Overview of DAU

The unified kingdom of Saudi in 1932 has promoted massive educational plans in track with the fast growing socioeconomic structure. This was met by the foundation in 1975 of the Saudi Ministry of Higher Education (MOHE) to set the national strategic plans of quality as well as quantity higher educational growth. Specifically, the five-year plan of 1995-2000 endorsed the higher education with an open budget that increased the number of universities in Saudi from 8 to 37 functioning at present, 10 of which are developed by the private sector including DAU. *(Source: The Saudi Ministry of Higher Education).* The total number of colleges surpassed 500 with the average of 13.5 colleges per university, in addition to more 37 specialized colleges, which are spread over the various regions of the kingdom. *(Source: Al-sharq Al – Awsat Newspaper, October 26th, 2011, issue 12020).* The ever growing Saudi higher education correlates with the population growth from 8.5 million in 1995 to 29 million at present, where the number of high school graduates who are legible for obtaining the higher education have increased from 192,000 in 2000 to 467,000 in 2013, with an almost equal percentage between male and female students (251,000 males and 216,000 females in 2013). *(Source: Al-Jazeirah Newspaper, April 6th, 2014, issue 15165).*

Moreover, the increase of Saudi females continuing their higher education on equal basis with males has closely integrated the strategies between schooling and higher education. This is clearly demonstrated by the decree in 2015 of The Custodian of the Two Holy Mosques His Royal Highness King Salman Ibn Abdel Aziz Al Saud to merge both in one Ministry of Education. In this respect, the foundation of DAU in 2009 was the first university in Saudi to offer architectural education for females, with educational services in common between males and females from primary schooling up to Bachelor and post graduate university education under one institutional vision, thus serving the community in its widest scope in accordance with the national strategies. Meanwhile, the increase in Saudi per capita of gross domestic product (GDP), which is the purchasing power parity (PPP) value of all final goods and services produced in a given year divided by the population for the same year, has reached 30,000USD in 2015 compared to 7500USD in 1995. This reflects the increasing standard of living in Saudi, which is the world´s biggest producer of oil that accounts for 46% of the GDP. The services sector represents 36 percent of this wealth, where the largest segments are government services (13 percent of GDP) including the educational services. *(Source: International Monetary Fund & World Bank reports).*

Founded by His Excellency Abdulaziz bin Ali Al-Tuwaijri, and after making his mark as one of the leaders in Saudi contributing to the national education system through the fully-fledged K-12 schools since 1994, Dar Al Uloom University was officially established under the rules governing private universities on 3rd March 2008, following the endorsement of resolution No. 3/52/1429 by the Custodian of the Two Holy Mosques and Chairman of the Higher Education Council. The establishment of

DAU took 8 years of groundwork to materialize including expert advice from the KSA and abroad and extensive market study to ensure suitability of the academic disciplines to the needs of students and the local economy. DAU establishment also involved solid capital and infrastructure investment matching its academic and operational needs. The process began in 2000 with resolution 212 issued by the Council of Ministers, followed by a feasibility assessment, which paved the way for the establishment of Dar Al Uloom Company and a comprehensive submission to the Ministry of Higher Education. On June 26th, 2008, the Ministry of Higher Education issued its final endorsement for the establishment of Dar Al-Uloom's 5 Colleges namely, College of Business Administration, College of Architectural Engineering and Digital Design, College of Law, College of Computer Engineering and Information Technology and College of Education and Human Development. Nevertheless, DAU has made tremendous advancements in a short timespan where this year of 2015 witnesses the opening of the new colleges of Medicine, Dentistry, Pharmacy and Applied Medical Sciences in broadened structure of the university, in addition to the expansion of each existing college to include more programs at both undergraduate and graduate levels, which are accommodated in expanded campus.

The architecture program at DAU is one of four programs of the College of Architectural Engineering and Digital Design (CADD). The four programs are Architecture, Interior Design, and Graphic Design, in addition to the Architectural Engineering program that is in the initiation process. The Architecture program being offered in CADD is five years duration, which is the internationally accepted norm for architectural education. The first year is a foundation year in which the student takes courses of university requirements and basic communication skills, while the architectural courses are distributed over 4 years thereafter. The architecture program was initiated in 2008 and designed based on a survey done by a committee that reviewed the architectural programs both in the regional universities and selected universities (accredited by NAAB) in the United States. The program of architecture aims to graduate professional male and female architects whom satisfy the needs of the National Saudi market. Those graduates should have to participate successfully in the extraordinary development that the kingdom of Saudi Arabia is currently undergoing. The program of Architecture also aims to achieve the highest level of creativity and skills in designing the built environment for our increasing complex and technological society. Education and practice of architectural design continue to emphasize a solid expertise in designing for people, their environments, and better quality of life for all. The curriculum of the Architecture program has been designed to be academically strong and meet the international standards of architectural education. Also the curriculum offers flexible electives that allow students to pursue either breadth or depth in specific design issues, depending on their interest and future career or plans, which is enforced by summer training program at the graduation year for real life experience with facilitated process of job-placement.

Further to the initial formation of the institutional vision and mission, it has been subject to continual development through community feedback and survey results of questionnaires delivered to the university staff and students in democratic and transparent participation to match the dynamic structuring of the fast growing university. This is evident by the uploaded vision over the institutional website, where

all the university parties have their impact on the institutional vision, mission and values towards the community, which currently states:

DAU Vision:

DAU strives to set new standards of excellence in education. We see ourselves as playing a major role in our country's economic, cultural, intellectual and spiritual development. We want to fulfill our social responsibilities and do our part in knowledge production and dissemination as well as high-quality education of particular relevance to today's world.

DAU Mission:

DAU will achieve its vision through active participation in producing and disseminating knowledge and preparing human resources to take their role in the country's development plans, with active participation in research, high-quality education, and fulfilling social responsibilities.

This is our guiding principle, which permeates our values right down to our very foundations:

Accreditation: Our degree programmes are diligently monitored by accreditation procedures.

Technology: The delivery of our education is enhanced by the use of technology.

Capacity: There are rigorous staff development programmes for both academic and administrative staff.

Content: Our accredited programmes are enriched by state-of-the-art educational content.

The whole DAU community including faculty, staff, administration and students will be encouraged to equally contribute to the achievement of the institution's vision.

DAU faculty are trained to;

- Stay contemporary in their subject matters and integrate their expertise in the educational process.
- Improve teaching and learning processes through sound pedagogies that help students develop critical thinking skills.
- Regularly review the curriculum and recommend necessary improvements to meet changing needs of the Kingdom.
- Contribute to the knowledge in their fields through effective participation in all kinds of scholarly activities.
- Encourage students to be fully involved in scholarly, artistic and creative activities.

DAU staff are trained to;

- Sustain the ethos and objectives of DAU in their internal and external behavior.
- Acquire appropriate skills that will contribute towards the achievement of DAU's vision.
- Maintain a constructive and fair work environment.

DAU students are taught to;

- Seriously embark on intensive education to build solid grounds for becoming competent professionals.
- Appreciate and promote Islamic values and act upon them.
- Use knowledge and creativity to help Saudi communities excel.
- Develop an interest in the challenges facing society and become responsible individuals who will contribute to the wellbeing of their society.
- Participate in artistic, cultural and social activities.

DAU administrations aim to;

- Lead the institution towards its mission and vision in a fair, ethical and equitable manner.
- Strive for inclusion of all members of the DAU community in the decision-making process.
- Seek resources to support the DAU mission through faculty and staff development, state-of-the-art classrooms, and creative endeavors.
- Communicate achievements and difficulties of the institution in a clear, effective and straightforward manner to the DAU community.

DAU Values:

Our core values are reflected in what we do and how we do it. Our behaviour is guided by sound ethics and professionalism, while always bearing in mind the fundamental values of Islam.

Fairness and Transparency: We believe in achieving our goals through fairness with people and transparency in our actions using a clear, efficient management system.

Equal opportunity: Men and women have equal access to knowledge and both can contribute equally to the development of the community and the country.

Everybody can learn: A university is a place where everyone has equal opportunity and where every individual can learn regardless of his/her personal difficulties or disabilities.

Learning as a lifelong process: We believe that learning is a process that does not stop outside our gate and is not contained within the strict time boundaries of a degree course. Learning is a lifelong process which we have a duty to encourage and to facilitate whenever we can.

A university as a place of innovation: Innovation and research play a major role in a country's economic growth and a university is one of the places where it should and will happen.

Critical thinking: We believe that knowledge cannot be acquired without sound pedagogical methods and critical thinking

Serving the community: A university is a place which serves the community, both locally and nationally.

Being open to the world: A university has a duty to help its students find their place in society as well as help that society open up to the world. This is especially true in the fast-expanding global economy, which is in turn driven and accelerated by ongoing technological innovations in every aspect of human activity.

Responsibility and accountability: We believe that our duty to community and stakeholders cannot be carried out without a true sense of accountability and responsibility.

Being realistic: All our ambitions, plans and actions will be guided and balanced by a strong sense of what is reasonably achievable. Being realistic also means being fair and transparent with ourselves and with our stakeholders, as part of our duty of complete honesty.

1.2. The College of Architectural Engineering and Digital Design (CADD)

Since the foundation in 2009 of DAU, CADD has been an active part of conveying the mission carried out by the university on the national and international levels. Although recently delivered, and due to the commitment of all related parties, CADD established cultural links on several occasions such as the national participation in collaborative preservation projects with the Saudi Commission for Tourism and Antiquities. Also the international events that are overwhelmed by DAU's distinctive hostage in 2013 of the World Heritage Day in attendance of world class professionals with the commemoration of the crowned King Salman Al Saud whom himself auspices the preservation of cultural heritage throughout the major part of his career. These cultural activities of CADD are reflected on the programs and curricula being offered in the college, while taking the lead of female education in the field that symbolizes universal community servicing regardless of race or gender. Thus CADD has started from where the Saudi education catches up.

The Advisory Committee to CADD composes distinctive experts and professional in the field on the international level, where the programs are set according to the survey of market demands, especially the female section that offers all three programs of architecture, interior design and graphic design. The active committee continues to advice on the development of programs and enhanced visions for CADD such as the Masters graduate program in Architectural Heritage and also the Architectural Engineering undergraduate program that are being processed upon the committee's recommendation for both male and female sections. Meanwhile, the

other CADD Committee for Academic Accreditation and Development includes international experts in the field (such as NAAB) where all CADD programs are seeking the top international accreditation or equivalency in each field of study. The objective is to structure all CADD programs on equal basis of internationally competitive graduates who can participate in the national development on the highest educational standards. Supported by generous and committed administration of DAU, and in accordance with the university mission, CADD is progressing with the achievement of its vision, mission and objectives that states:

CADD Vision:

The College of Architectural Engineering and Digital Design (CADD) at DAU aims to be the leading independent, higher-education institution in the multidisciplinary field of architecture and digital design, producing national and global pioneers of the highest international standards in the field.

CADD Mission:

The College of Architectural Engineering and Digital Design (CADD) is committed to providing a creative environment that integrates digital media, technological developments, pedagogical focus and the teaching of human values for the advancement of a distinguished learning-centred environment, cutting-edge scientific research and meaningful community consultation for social development and greater prosperity.

CADD provides the resources for the optimization of its multi-purpose role as a catalyst for new learning opportunities, national and international partnerships, continuous studies and professional growth.

CADD Values:

Encouraging student creativity through staff of different schools of thoughts that assures qualitative education with internationally accredited distinction, while promoting honesty of educational process and developing leadership responsibilities of teamwork responsiveness.

CADD Objectives:

The course of study at CADD will enable the student to:

- Apply creative and problem-solving approaches to the design of interiors to effect positive change in the health, welfare and quality of life for people in home, work and leisure environments.
- Develop a good conceptual grasp of the formal aspects and digital technologies of graphic design in order to optimize the processes of elaboration, presentation and documentation.
- Embrace building technology and digital technology as resources and tools for innovation, allowing the exploration of complex architectural solutions to be envisioned as an expression of design excellence.

- Embrace technology and digital media as a resource and tool for innovation, allowing the exploration of complex interior solutions.
- Integrate a historical perspective into the planning of future environments for diverse populations to take into account tradition, value, culture and heritage.
- Embark on a professional architecture career in private practice and/or the construction industry and assume a leadership role.
- Produce innovative graphic design projects in the publishing, advertising, commercial and business field.
- Solve design and project-related problems creatively based on sound architectural principles and utilization of digital media.

1.3. CADD Committees

The activities of CADD are supported by various committees with biannual reporting on their achievements, where their scope of work can be summarized as follows:

1.3.1. The Committee of Program Accreditation and Development

This committee is headed by the Dean of the College and the members are; the Vice Dean for Quality and Development, selected faculty members and external consultants of high experience in the development and evaluation of the architectural educations. Those external consultants are invited from other well-known universities on the regional and national scale. The committee is responsible for the following;

- Follow up on the procedures of national and international accreditation of CADD programs.
- Conduct benchmarking of program development with top-tier accredited programs.
- Apply rubrics of measuring student learning outcomes at program and course levels.
- Prepare reports on processing the proposed programs on undergraduate and graduate levels.

1.3.2. The Committee of Student Affairs

This committee is headed by the Vice Dean for Academic Affairs and the members are; faculty member who is the head of the student club and faculty member who is concerned with the student affairs. This committee is concerned with;

- Adjusting the schedules per semester for students and staff members.
- Adjusting the schedules per semester for final exams and juries.
- Reviewing the rules and regulations of admitting students to CADD programs.
- Investigating the student requests in the most efficient processing.

1.3.3. The Committee of Extracurricular Activities

This committee is headed by the Vice Dean for Quality and Development and the members are three faculty members, one from each program in the college. This committee is concerned with;

- Promoting cultural and recreational activities for students and staff.
- Holding and attending exhibitions in and out of DAU with the student participation.
- Organizing the student participation in workshops that are held in or out of DAU.
- Encouraging students to attend conferences whenever possible.
- Organizing public lectures by invited professionals form various fields.
- Preparing site visits and field works on specialized topics.

1.3.4. The Committee of Academic Advising

This committee is headed by the Vice Dean of the Academic Affairs and the members are three faculty members, one from each program in the college. This committee is concerned with;

- Training academic advisors on the various tasks of advising students.
- Orienting advisors (and students) on the proper registration for study plan achievement.
- Follow up on the student performance in the study plan.
- Follow up on graduates for future career development.

In addition to the above-mentioned committees of CADD and their activities, two more committees' work directly to the Dean for the concerns of physical and librarian resources. The former is responsible for the spatial organization of allotted CADD spaces in the DAU building, which also includes the furnishings and equipment for the comfort and interaction of student performance with the faculty staff. The later committee communicates regularly with the course instructors for updating the recommended list of textbooks and academic journals to enrich the CADD library and to develop E-library of the same collection. The E-library would have more priority in the near future to allow the membership of web-accessing for academic journals and reference materials, especially with the current development of post graduate programs in CADD.

1.4. CADD Strategic Objectives

Upon the committees' recommendations of the biannual CADD report, the strategic objectives of CADD become clear for action plan. While these recommendations differ from phase to phase of CADD development, their guidelines of targeted objectives are defined as follows:

1. To achieve nationally and internationally recognized accreditation of all CADD programs.
2. To optimize the student performance criteria when scheduling curricular timetables.
3. To promote extracurricular activities for student (and staff) intellectual development with direct links to the society at large.
4. To orientate students in responsive academic advising for smooth study plan achievement.

5. To document CADD activities for easy access of information with efficient administrative system in CADD.
6. To develop physical resources to enhance the studying environment in CADD.
7. To obtain selective collection of CADD's library for optimum student learning outcomes.

1.5. CADD Strategic Plan

Further to the strategic objectives, the strategic plan is set to meet the objectives in detailed actions with the following criteria:

1. Achieving world class accreditation for quality assurance of all CADD programs

- Benchmarking of distinctive international academic accreditation for all CADD programs.
- Recruitment of faculty staff form different schools of thoughts.
- Update to the new techniques of learning.
- Integrate the advisory board of CADD in the academic learning process.
- Interrelation of academic programs at the college level requirements.
- Promoting academic programs of interdisciplinary studies among the CADD's programs, such as AE.

2. Ensuring the optimum student performance criteria of scheduling proper plans

- Coordination between male and female sections
- Distribution of efficient course loads for best student performance
- Keeping the instructor to student ratio at maximum 1:12
- Matching the specialty of staff members with the courses assigned
- Smooth integration of adjunct staff to the study plan

3. Promoting extracurricular activities for student (and staff) intellectual development with direct links to the society at large

- Participation of students and staff in professional practice.
- Participation of students and staff in training programs.
- Participation of students and staff in workshops and conferences.
- Participation of students and staff in cultural and sports events.
- Inviting distinctive professionals for public lecturing.

4. Orienting students in responsive academic advising for smooth study plan achievement

- Advising on training programs.
- Advising on learning and research development.

- Advising on registration of courses per semester.
- Advising on personal matters.

5. Documenting CADD activities for easy access of information with efficient administrative system in CADD

- Filing up of the various CADD meeting minutes in hard and soft copies.
- Archiving of course reports in hard and soft copies.
- Structuring database of CADD information such as statistics on student and staff.
- Developing the administrative system for efficient communications and handling of documents.
- Structuring intranet of CADD for future on-line documentation.

6. Developing physical resources to enhance the studying environment in CADD

- Enhancing the humanities of CADD's physical environment for better performance of the educational process.
- State-of-the-art equipment and furnishing for best academic performance.
- Developing CADD spaces for most efficient performance without sound or visual pollution.

7. Obtaining selective collection of CADD's library for optimum student learning outcomes

- Selective collection by year, publisher, author, preface, citations and reviewing comments.
- Updating the catalogue of collection in CADD's library
- Structuring the E-library for future development and membership of on-line access to various academic sites and specialized academic journals.

1.6. The Architectural Program in Perspective

Since its foundation in 2009, the program of architecture maintains equity of university environment and educational activities between male and female sections, while supported by collaborative staff members between both sections. The program awards the Bachelor of Architecture Degree upon the successful completion of 172 credit hours, and two months of field training. The regular revision of the program aims at benchmarking with the top accredited programs of the NAAB in terms of quality and quantity of contents down to the detailed course level. The latest revision of the program introduced some more courses on the basic design level and advanced computer graphics, while shifted a few excessive theory courses to the elective pool. The increased efficiency of the program matches the benchmarking criteria, while keeping the total credits of the program around average by 166 for the study plan of bell-shaped distribution per semester. The process of modifying the study plan integrates benchmarking by specialty of the faculty members, the market's demands and the recommendation of the Committee of Program

Development and Accreditation (CPAD). The role of the CPAD committee is to assess the on-going educational process of the program, and recommends the necessary measures to meet the international standards. The committee includes distinguished professors and professional consultants who have long experiences in accreditation and development of academic programs. Among the consultants are Prof. Elsayed Amer, Dr. Nada Alnafea and Prof. Meshary Alneim. On the specific course level, sub-committees have been assembled to carry out the continual review of curriculum and course specifications. The core courses of the program have been clustered by theme to form course committees by specialty. In this respect, each staff member is assigned to his/her specialized committee.

The architecture program emphasizes on the concept of quality assurance and excellence of learning, which is achieved through the balance between quality and quantity in architectural education and developing ingenuity and creativity. Special emphasis of the program, nevertheless, sustains the cultural and architectural heritage in integration to the indigenous contemporary built environment. This is clearly demonstrated by the design studio courses, where the projects concentrate on the traditional values of cultural implications for the society. The same intention has been enforced by DAU's organizing and participating in several events related to urban heritage, most recently hosting the 2013 World Heritage Day anniversary, which was the first to be held in Saudi. The event was a major success, through which the MoU was signed between DAU and the Saudi Commission for Tourism and Antiquities (SCTA). The MoU entails the college participation in the national heritage sites conservation in the Kingdom. This had opened the vision of CPAD to structure the Masters Program in architectural heritage conservation and management. Also the program of architecture concentrates on Technology-related content throughout the design of the curriculum.

Interactive learning environment with a common motivation of digital media has also been considered. Meanwhile, the CPAD in 2013 prepared a new program of Architectural Engineering (AE) to add to the optimized choice of CADD disciplines. This optimization not only intersects in College requirements, but also cross-correlates between the ARCH and AE programs in particular. Enlarged CADD programs had widened the CPAD scope of work to include experts of various disciplines, and headed by the College Dean. Regular 5-year overview of the ARCH program was also scheduled in 2013, where the CPAD conducted a thorough curricular revision. The recommendations of several course amendments were based on typical benchmark process, which identifies the new trends of current top accredited NAAB programs. The architecture program is fortunate by ample facilities of physical resources in dual male and female sections. This is evident by the special placement of the architecture program in newly allotted level of the DAU building for exclusive facilities.

1.6.1. Vision:

To be a leading school of architecture concentrating on creative, sustainable, technological and practical solutions while preserving the cultural and environmental conditions.

1.6.2. Mission:

To pursue professional architectural discipline through combining the rigors of academy with the realities of architectural practice. The aim is to graduate professional architects who can satisfy the market's needs and exchange knowledge and expertise with world's academic and professional institutions.

1.6.3. General Objectives:

1. To join a professional career in the architectural practice and building industry assuming leadership responsibilities.
2. To solve design and project related problems creatively based on sound architectural principles and utilization of digital media.
3. To embrace building technology and digital technology as resources and tools for innovation permitting the exploration of architectural solutions of complexity to be envisioned as a dimension of design excellence.
4. To conduct multi-disciplinary/inter-disciplinary interactions as required by their work.
5. To communicate effectively to meet increasing professional demands.
6. To preserve the cultural and architectural heritage and promote indigenous contemporary architecture.

1.6.4. Specific Objectives:

1. Identify the basic scientific characteristics of building materials and technology and advanced technical tools that can be used in architectural projects.
2. Illustrate abstract ideas to test design alternatives using evaluation criteria and standards.
3. Discuss the research methodologies and approaches to identify form, systems, architectural development and their influence on the social context.
4. Analyse the proper environmental systems for application in integrated projects as embodied energy, passive and active cooling techniques, using appropriate assessment tools for performance evaluation.
5. Develop clear drawings; write specifications to identify the appropriate components, building materials and systems for building design.
6. Apply architectural design criteria and principles in the building design process.
7. Apply environmental and building systems' to design comprehensive functional sustainable projects, using the natural recourses available in the site.
8. Apply the cultural and traditional understanding of the local indigenous, regional and national settings in the design process of projects.
9. Describe the architect skills and techniques required to work in collaboration with other disciplines in building design, construction, and operation stages.
10. Illustrate the values, diverse needs, behavioral pattern, cultures, and, physical abilities and the implication of diversification on the architect's responsibilities.

11. Illustrate technical drawings and models to identify, accessibility and appropriate systems and building materials for projects design.
12. Identify the extent the built environment is designed and adapted to natural environment to satisfy human behaviour and needs.
13. Identify the responsibility of the architect to reconcile the community needs in terms of building codes, accessibility, laws and environmental regulations.
14. Illustrate the fundamentals costs of building and financial feasibility such as operational costs; project funding and financing during the design and construction processes.
15. Develop project work plan and detailed schedule of deliverables through all the design stages.

1.6.5. Conceptual Framework of Learning:

1. Encourage creativity of students without imposing conceptual thoughts of instructors.
2. Emphasizing originality in spatiotemporal dimensions with full respect of nature and culture.
3. Incorporate IT technologies in search and presentation techniques.
4. Interact in teamwork with leadership responsibilities.
5. Precedence identification with typological abstraction.
6. Community values in design approach.
7. Flexibility towards future developments.
8. Compromise qualitative and quantitative aspects of problem-solving.
9. Participation in open discussions and critical thinking.
10. Overview of offered courses per semester in interrelated learning, with reflection in studio.

2. Progress since Visit One of NAAB

NAAB visit one was conducted on April 21-22, 2014 by Prof. Kenneth Schwartz, FAIA, Favrot Professor and Dean of the Tulane School of Architecture and a former president of the NAAB. The report on the visit allowed to proceeding with the conduction of Visit Two. The progress since Visit One can be identified as follows:

1. Developing the library by increasing the number of books.
2. Adding more labs in the newly added space of the college.
3. Hiring more qualified faculty members.
4. Finishing up the developed new premises where the program has moved to accommodate the new spaces and facilities.

5- Developing more participation in the Saudi community.

3. The Conditions of NAAB Substantial Equivalency

3.1. Program Response to the NAAB Perspectives

3.1.1. Architectural Education and the Academic Context

The College of Architectural Engineering and Digital Design (CADD) consists of three programs, which are The Program of Architecture, The Program of Interior Design and The Program of Graphic Design. The three programs offer, respectively, The Bachelor of Architecture, Interior Design and Graphic Design. Since the program's launching in 2009 for male and female sections, the architecture program has been distributed over 5 years duration. The first year is a University Preparatory Program with some College requirements introduced at the second semester. The architecture core program is distributed over the latter 4 years of the study plan. The students are awarded the Bachelor of Architecture degree upon the successful completion of 172 credit hours (reduced to 166 credits upon the 5-year schedule of program review in 2013) and two months of field training. The number of credits was reduced to 166 based on a review and evaluation of the markets demands and the experience of the faculty members. The Committee of Program Accreditation and Development (CPAD) reevaluated the curriculum and listened to the opinions of the faculty members and practitioners where the number of credits has been modified from 177 to 166 credits. The architecture program interacts with the other two programs of interior design and graphic design in college requirements during the second and third semesters of the study plan, in addition to professional elective courses at the final two years of the program. Although these professional electives are offered within the architecture program, the student has the opportunity to take two of the required four elective courses from outside the architecture program upon the agreement of the Program Council. Having graduated the first batch of males and females in the academic year 2013-2014, the architecture program follows up with the graduated students on their career development, where some of them pursue post graduate studies in other universities, and others started their professional career in architectural consultancy firms in Saudi Arabia or back in their home countries.

3.1.2. Architectural Education and the Students

Students are eligible to apply for the entry to the architecture program after graduating from the science section of the high schooling system in Saudi. Accepted students are required to take the English placement test for proper distribution among the three-leveled English language skills that terminates with the preparation for taking the IELTS exam at later stage of the study plan. Besides the compulsory English language, students at the preparatory stage (first year) are introduced to the university education through pedagogical courses of elementary mathematics, basics of computing skills, developing personal communication skills and physical education. The architectural core program is distributed in horizontal and vertical courses along the 5-year study plan. The course-learning outcomes apply the NAAB's student performance criteria to ensure the highest standard of architectural education per course, which covers the five domains of knowledge, cognitive, IT and numerical, interpersonal and psychomotor skills.

The student is educated to use manual graphics during the first two years of the study plan, with intensive computer graphics thereafter. Meanwhile, the students are educated to be technically sound with critical thinking towards problem solving. With regard to university life, the Student Advisory Council welcomes students at any time to offer help of administrative or academic nature. Also, each student is assigned to an academic advisor who takes full responsibility of responding the student inquires on academic and personal matters as well. The Dean, on his part, holds regular meetings with male and female students to listen to their opinions and inquiries or requests to pursue their studies with convenience. The elected Student Council is set to organize and convey the messages of any kind between the students and the administration at all levels.

The policy of architectural education and students is based on transparency and equity between males and females for the following concerns:

1. Studio courses are intended to develop the skills of students to analyze, articulate and synthesize solutions pertaining to the cultural understanding and physical components of the built environment. In the design studios, students are encouraged to take projects of real sites and real demands according to the national development strategy.
2. The program of architecture is always working to keep the ratio between the faculty and students as 1:12 in the design studios. Students are allowed to choose the faculty they prefer to be taught from.
3. The supporting services and facilities such as the dual swimming pools and cafeterias as well as the gathering spaces in the college and university enhance the student/student, student/faculty and student/administration relationships.
4. The college organizes regular meetings with the students to listen to their problems and opinions in the program as well as their evaluation to the teaching methods and techniques. These meetings are attended by the Dean of the College, the Chairman of the Program and the Student Club, in the absence of faculty members.
5. The program policy is directed to build up the architectural personality of the students through the teaching methods, the curriculum, workshops and the summer training course where the students can touch the practical life of the architectural profession.

3.1.3. Architectural Education and Professional Registration

Architects of Bachelor degree in Saudi Arabia (as well as the other Arabic countries of the region) are registered as engineers. After several years of experience and engagement in professional works, the registered architect can apply for consultancy licensing upon the approval by the specialized reviewing committee of the syndicate. The Saudi Council of Engineers (which represents the syndicating affairs) is an organization that controls engineering practices in Saudi where architects are registered. As per the rule of the Saudi Council of Engineers, registration to become a professional member of the Council requires 5-years of internship after obtaining the Bachelor of Architecture degree from recognized institution.

3.1.4. Architectural Education and the Profession

Within the booming development in the kingdom of Saudi Arabia, Riyadh City offers to the students a practicing experience of architecture and building industry spreading all over the city. The large mix of academic staff in the architecture program is reflected on the educational process, which promotes conceptual thinking from different schools of thoughts and backgrounds. Common theme of the faculty staff is their practical proficiency with some having consultancy level of registration due to their long expertise. Thus, combining between the academic and practical proficiency ensures the professional education of the program. Nevertheless, distinctive professionals in the field who are practicing in Riyadh are invited as adjunct professors to involve in the educational process of the program.

This perfect balance between selective recruitment of professionals and the fortunate location of DAU in Riyadh with many distinguished professionals in reach, contributes to full coverage of professional education for the architecture program. Meanwhile, the study plan itself offers several courses that encounter the issue of professional practicing from various points of view, and culminated by the course entitled “professional practice” at the final semester of graduation. In this course, the architectural practice within the context of the Kingdom of Saudi Arabia is given a great attention with emphases on the relationships between the profession and society. The program is preparing the students to graduate professional architects that can successfully practice architecture and satisfy the markets needs and professionally work in a multidisciplinary team. This together with the required professional training program for graduation ensures the smooth transition of students from the academic to the professional practical field of the architecture program.

3.1.5. Architectural Education and the Society

The establishment of the architecture program at DAU contributes to the Saudi community services through the participation in the national development program, which solves out the problems that directly affect the lifestyle of the society. The program of architecture is publicized through various means of mass media such as web access, audiovisual presentations, welcoming visits of high-school students and the publication of DAU brochure with full details on the program in the CADD catalogue. The academic calendar of the program announces to the public about the application process and registration with the curriculum description and schedule of student registration for the offered courses per semester. Meanwhile, all the cultural and social events as well as the training programs and consultation services are made accessible to the public of various interests.

The design studios of the architecture program, which is the spine of study plan, introduce real life projects to students at the various levels of the study plan. This is evident by the graduation projects, which starts by extensive search of real projects serving the community. The objective is to maximize the cultural values of the projects in real life situations. This task of project searching is enforced on males and females in common, which proves the usefulness of the female

interaction with the society through the architectural education. Moreover, each design studio starts with case study analysis that incorporates the social aspects in the selected case of different cultures. Thus, the student becomes aware of the design approach with the social aspect in perspective. The social approach of the design studios tones up the education of the architecture program with the objective of architectural heritage preservation that considers the design of social values. Additionally, The College of Architectural Engineering and Digital Design (CADD) has served the community through the architectural program in the following;

1. Hosting the anniversary of the "World Heritage Day" in DAU.
2. Establishing an alumni and employer association.
3. Celebrating the prize of urban heritage achievement with the personal of the year, His Royal Highness King Salman bin Abdulaziz Al Saud.
4. Striking MoUs with each of the Saudi Commission for Tourism and Antiquities, Omran Cooperative Society, Middle Eastern Club for Photographers and the Saudi Council of Engineers.
5. Participating by the students' distinctive projects in the Economic House exhibition in Riyadh.
6. Establishing the Consultation Unit of CADD for design projects , research and training courses. The program has designed many projects such as the extension development for the architecture program, the university hospital and the college of Dentistry.
7. Participating in the national competition for Samhan District conservation project in Alderaiah old town in Riyadh.
8. Participating in the National Urban Heritage event held in 10-12 December, 2012 in Dammam.
9. Participating in the sixth gathering of Gulf Engineers and Architects held in Jeddah.
10. Organizing a series of public lectures in DAU by invited professionals.
11. Organizing workshops for students in architecture programs from different universities in the kingdom.

3.2. Program Self-Assessment Procedures:

The key issue of self-assessment sustains the process of development for the architecture program in DAU. Statistics and benchmark surveys of the program are taken as indicators of strengths, opportunities and priorities of development. The database information on the program includes students, staff, curriculum, physical resources, financial resources and community services. The performance criteria of the program are evaluated from the collective profile down to the detailed curriculum and course delivery. Thus all candidates affiliated to the program are involved on individual as well as interactive basis for effective program assessment. Continuous process of assessment indicators overviews the major internal driving forces of thematic curriculum assessment at the course-level classification with the essence of the Graduation Project assessment, in parallel to

the program's external factors of students' summer training, extracurricular activities, employment of graduates, alumni society, human resources of the program, administrative structure and the system of academic advising. Each of these assessment indicators is explored in depth with correlative recommendations for future progress of the program.

3.2.1. Indicators of Curriculum Level Assessment

Annual curriculum benchmark of the architecture program attempts to catch-up with the top-tier NAAB accredited programs of the US, in addition to King Saud University of NAAB substantial equivalency in Saudi with regional reputation. In this benchmark process, the curriculums of the selected programs are classified into the requirements of general education, college and core curriculum including the elective and COOP/Training parts. The selected benchmark curriculums overview the architecture programs of California Polytechnic State University, University of Southern California, Southern California Institute of Architecture, Auburn University, besides King Saud University (Table 1). The reasons behind the selected programs as benchmark are;

1) All selected programs of the US are ranked among the NAAB's best-ten in 2014.
2) Three out of the top-tier US pragmas in 2014 concentrate in California, which proves ideal benchmarking for competitive architectural education, and not just coincidence.
3) Auburn architecture program makes it to the top list in 2014 after gradual improve in rank form year-to-year, which proves an ambitious model for benchmarking in competence with Cornell, Virginia Tech and Rice programs of long preserved high rank.
4) The long established program of King Saud University is the first in Saudi and second among the Gulf States to obtain the NAAB substantial equivalency, with maximum 6-years timespan.

Resulted benchmark verifies the curriculum improvement in terms of contents and the allocated credits per course. Optimized curriculum benchmark, thus, ensures the total encounters of student performance criteria in NAAB accreditation with total credits closer to average. Homogenous pre-requisite structure of vertical courses by theme is distributed semester-wise in bell-shaped study plan for the benefit of most efficient student performance in the program. Meanwhile, dynamic curriculum structure between core and elective courses allows their swap for curriculum updating in the benchmark process. Market oriented curriculum towards the end of the program with training experience represents the essence of program benchmarking. The opportunity of one important benchmark finding is the possibility of accepting credit-equivalent COOP program in compensation of the elective courses of the core program as learned from the current trend in the US top NAAB accredited programs. This would further strengthen the curriculum into the practical field and the job-finding task according to the market demands.

Table 1. Comparison with Five International Recognized Arch. Programs:

SN	University Name	General Education Requirements					College & Core Requirements						Electives (major/free)	COOP/Training	Total Credits
		Personal Skills	Social Sciences & PE	Digital Media	Math & Sciences	English	Calculus & Physics	Design Studio	History, Theory, Practice	Structure & Control Systems	Construction & Urban	Visual Communication			
1	**Dar Al Uloom University (after benchmark)** (Arch program established since 2009 with the first batch graduated in 2014)	**5**	**9**	**1**	**4**	**16**	**7**	**48**	**14**	**17**	**28**	**9**	**8 (4,4)**	**0**	**166**
	Dar Al Uloom University (before benchmark) (Arch program established since 2009 with the first batch graduating in 2014)	**5**	**9**	**1**	**4**	**16**	**4**	**47**	**21**	**20**	**25**	**8**	**12 (6,6)**	**0**	**172**
2	**King Saud University** (One of top national universities, only accredited program by NAAB in the Kingdom and second in Arab universities)	5	14	3	3	16	11	46	16	10	26	6	8 (4,4)	0	170
3	**California Polytechnic State University** (ranked 1st in the top ten of USA Architecture Undergraduate Program in 2014) (quarter system)	34.7					10.6	42	26	18		8	10.7 (10.7,0)		150
4	**University of Southern California** (ranked 7th in the top ten of USA Architecture Undergraduate Program in 2014)	25					8	56	19	24		2	26 (26,0)		160
5	**Southern California Institute of Architecture** (ranked 9th in the top ten of USA Architecture Undergraduate Program in 2014)	24					7	66	23	36		3	12 (12,0)		171
6	**Auburn University** (ranked 8th in the top ten of USA Architecture undergraduate Program in 2014)	30					12	59	25	20		4	9 (9,0)		159
Average of Benchmark Programs		31					9.7	53.8	21.8	28		4.6	13 (13,0)		162

3.2.2. Assessment Indicators of Curriculum Outcomes

Indicators of curriculum outcomes is a two-way process where the top-bottom analysis reviews the collective statistics of program performance in gross measures with their results impacting on the individual course level development, while the bottom-top approach starts from the course-level assessment towards their collective impact on the program development. The method of assessment compares the planned matrix of student performance criteria to the course list versus the afterward achievement of the same matrix. Through this single overview, the weaknesses of curriculum learning outcomes can be identified for future recommendations. The future strategy points out the failing performance criteria to be intensified through more encounters by other courses than the planned, or adding specific contents within courses to enforce the targeted performance criteria, or even considering the addition of special courses within the core or elective program to achieve the missing criteria. Of major importance in this process is the initial formulation of the NAAB matrix itself, which lists all the student performance criteria of the NAAB to be met by the list of courses in the program, thus, ensuring their match without any blank row or column (Table 2). In this respect, a clear process of building up the NAAB matrix has been identified and finalized as follows:

1. Conducting workshops to the faculty members of the program on the 33-criteria of student performance to be achieved.
2. Asking the faculty members of each course of the program to pick the most appropriate student performance list among the 33-criteria of the NAAB.
3. Aggregating the received lists from the faculty members in one matrix format.
4. Reviewing the resulted matrix to ensure the coherent distribution of student performance criteria among the course inventory.
5. Feeding back the revised matrix to the course instructors for adaptation.
6. Confirming the implementation of the finalized NAAB matrix at the course-level learning outcomes.
7. Following up on the NAAB course file to ensure the student performance criteria are being met in each course.

Once any deficiency is observed for any one course in achieving the intended NAAB student performance criteria, the reversed process takes place from the course-level upwards. In process, the course committee that includes the instructor with the course coordinator and other specialized members of the subject work together for specifying the reasons behind the unsatisfactory meeting of student learning outcomes. Upon the committee's recommended reporting on the improvement plan, the defects of course delivery is enforced and reintegrated to the NAAB matrix system for reevaluation until all student learning outcomes are adequately met with satisfactory results.

Table 2. NAAB Matrix of Course Encounters with Student Performance Criteria: 3.2.3. Indicators of Course Level Assessment

NAAB MATRIX																																				
A= Ability U= Understanding	**NAAB Student Performance Criteria**																																			
Course	1. Speaking and Writing Skills	2. Critical Thinking Skills	3.Graphic Skills	4. Research Skills	5. Formal Ordering Systems	6. Fundamental Design Skills	7. Collaborative Skills	8. National and Regional Traditions	9. Historical Traditions	10. Use of Precedents	11. Human Behavior	12. Human Diversity	13. Accessibility	14. Sustainable Design	15. Program Preparation	16. Site Conditions	17. Structural Systems	18. Environmental Systems	19. Life Safety	20. Building Envelope Systems	21. Building Service Systems	22. Building Systems Integration	23. Building Materials and Assemblies	24. Construction Cost Control	25. Technical Documentation	26. Client Role in Architecture	27. Comprehensive Design	28. Architect's Administrative Roles	29. Professional Registration	30. Architectural Practice	31. Leadership	32. Legal Responsibilities	33. Ethics and Professional Judgment
LEVEL OF ACCOMPLISHMENT	A	A	A	A	U	A	A	U	U	A	U	U	A	U	A	A	U	U	U	U	U	A	U	U	A	U	A	U	U	U	U	U	U	U
DES 101 - Design Foundation 1																																				
DES 102 - Descriptive Drawing 1																																				
DES 103 - Digit. Photo & Img Proc.																																				
PHY 101 - General Physics																																				
DES 111 - Design Foundation 2																																				
DES 112 - Descriptive Drawing 2																																				
DES 113 - Digital Media for Design																																				
ARC 201 - History of Architecture 1																																				
ARC 202 - Building Construction 1																																				
ARC 216 - Statics																																				
ARC 211 - Architectural Design 1																																				
ARC 212 - Graphic Communication																																				
ARC 213 - History of Architecture 2																																				
ARC 214 - Surveying																																				
ARC 215 - Theory of Structure																																				
ARC 301 - Inter. Design Studio 1																																				
ARC 302 - Theory of Architecture 1																																				
ARC 303 - Building Construction 2																																				
ARC 304 - Landscape & Site Plan.																																				
ARC 305 - Mat. & Cons. Systems																																				
ARC 306 - Structural Analysis																																				
ARC 311 - Inter. Design Studio 2																																				
ARC 312 - Arch. Of Arabian Region																																				
ARC 313 - Theory of Architecture 2																																				
ARC 314 - Sanitary & Tech Install.																																				
ARC 315 - Conc. & Steel Cons.																																				
ARC 316 - Adv. 3D Model & Anim.																																				
ARC 401 - Comp. Design Studio 1																																				
ARC 402 - Construct. Documents 1																																				
ARC 403 - Housing & Urban Des.																																				
ARC 404 - Environmental Control																																				
ARC 406 - Lighting & Acoustics																																				
ARC 411 - Comp. Design Studio 2																																				
ARC 412 - Construct. Documents 2																																				
ARC 413 - Humanities in Architecture																																				
ARC 414 - Principle of Urban Plan.																																				
ARC 415 - Soil Mec. & Foundations																																				
ARC 417 - Architectural Program																																				
ARC 501 - Adv. Design Studio																																				
ARC 502 - Grad. Project Research																																				
ARC 511 - Graduation Project																																				
ARC 512 - Professional Practice																																				

Further to the curriculum-level and learning outcomes, the level of individual courses follows a similar process of benchmarking with counterparts of internationally accredited programs. The course-level assessment, however, performs a different strategy of coordination within the program of DAU for specialized benchmarking criteria. In this regard, the core curriculum is subdivided into thematic course fields such as design, construction, history & theory, urban and environmental courses, where each of these fields assigns a committee of specialized faculty members of the program to conduct the benchmarking assessment on their theme courses. The course committee selects coordinator to take responsibility for the strategy of assessment with the recommendations for improvement. The course instructor by default becomes part of the thematic course committee to share opinions with other members for a full investigation of course materials. The committee meets on regular basis at least once a month, with recommended actions to be taken.

Parallel to the thematic course committees, the program Chair conducts comprehensive review on all courses for thorough inspection of course documents. In this double-checking process, the Chair invites the course instructor and coordinator as well as any other appropriate staff member of concern with the course to discuss the detailed deliverables of the course from all considerations of the academic standard. The objective of comprehensive feedback on each course enumerates the following benefits:

1. Consistent course material regardless of instructor change at any time.
2. Share opinions for the best qualitative benchmarking on each course development.
3. Avoid personal thoughts or teaching methods that are not internationally recognized.
4. Archive the chronology of course development for reference whenever needed.
5. Ensure the achievement of student performance criteria according to both NAAB and NCAAA national accreditation.

With regard to the indicators of course assessment, two comprehensive course files are prepared from the semester day one of each course and progress with the course delivery until the final submission two-weeks from the semester's termination. The first course file concerns the NCAAA requirement for program accreditation, which includes a checklist of several items to be documented such as course specification, course report, student assessment, lecture notes, assignments and samples of best, average and border performance of students throughout the course delivery. Similarly, comparable course file of the NAAB compiles the checklist of documents for each course also with samples of high pass and low pass of all exercises, projects and assignments and research works of students registered in the course. Thus, tracking the course file whether of the NAAB or NCAAA provides a full configuration of the course strengths and weaknesses to be considered for improvement.

3.2.4. Student Indicators of Course Assessment

The Dean of CADD holds regular closed meetings at least twice a semester with male and female students for listening to their opinions on the educational process and records any complaints raised on specific courses or learning constraints to be investigated. This type of student assessment not only on course level, but in extended scope of the learning process is believed to have powerful indicator of assessing any course delivery due to the open discussion of more interaction than questionnaires. Also the Dean's direct investigation of any course matter tends to speed up the resolving measures without having to wait until the time is over giving no chance for any one course to be back on track. Indeed the Dean's and Vice Dean's offices in both male and female sections are open anytime for receiving student complaints of any kind that includes indicators of course assessment.

Meanwhile, the academic supervisor as part of his duties may receive any complaint regarding course matters to start the process of investigation directly with the course responsible, or convey the matter to the program council meeting for decision making. Moreover, after announcing the course results, students may raise grade objection request over the university IT system, which may reopen extended investigation of the approved course results including the continuous assessment throughout the semester. During this process, opinions are investigated from all the parties involved, including the instructors, so as to avoid any subjective thoughts of individual student cases.

Apart from the interactive student indicators of course assessment, each student at the end of the semester completes the questionnaire of course assessment over the university IT system. Without which the student can't access the grade result, thus made compulsory before emotional assessment after grading and ensures 100% student assessment. The questionnaire is supposed to cover all areas of course assessment including teaching methods, learning outcomes and instructor's commitment to the course delivery with the qualitative/quantitative criteria of the course assessment, in addition to the administrative matters of the course. The completed student questionnaires of each course are processed in the university IT system with final report of statistical data on rating each assessed question in average measure from 1-to-5 with the average total, in addition to their average summed assessment of the course.

In case any of the courses is divided into more than one section with different instructors, or if the course is taught separately between male and female sections, each course section has a separate assessment questionnaire. Thus, the cross-assessment of students in different sections is used as an indicator for the overall course evaluation with the necessary measures to be taken in future course improvement plans. Overview of student assessment indicators ensures the coherence of course deliverables in time series as well as parallel per semester instruction, while ensuring the ongoing achievement of student performance criteria during the semester before things are over. Left to mention is the student indicator of the course assessment by the instructor him/herself where the feedback and interaction of students during the semester can improve the strategy of on-spot further course delivery.

3.2.5. Faculty Indicators of Course Assessment

Through the university IT system, each instructor conducts the 'course report' at the end of the semester that includes the assessment of student learning outcomes as the course progressed. The same report covers the effectiveness of conducted teaching methods and any eccentricity from the preplanned course specification in justified reasoning. The objective is to include the instructor inside the course evaluation process in self-assessment attitude as an essential part of the architectural education. Meanwhile, peer review indicator of course assessment lifts any bias in self-evaluation according to rubric cross-checking among instructors and coordinators or course committees. In more complicated cases such as grade objection request by more than one student of the same section, senior external faculty members of professional and academic experiences are invited as referees to form a committee for reviewing the case with future recommendations based on the course assessment. In this regard, the faculty indicators of course assessment ensures the fairness of evaluation strategy by more than one faculty per course.

3.2.6. Indicators of Graduation Project Assessment:

The graduation project represents the essence of the architecture program in cross-sectional examination of the student performance criteria. The structure of the graduation project follows the international norm of subdivision into a separate research programming and followed by the design studio, hence extending along the final two consecutive semesters. Although the second stage of design studio weights the heavy-steak of the graduation project, the prior programming stage is crucial for the foundational strategy of the whole graduation project. Each graduating student is required to select the type of project to conduct. The programming stage encourages students to select projects of importance to the society as part of the community services. For example, the first two batches graduated students with projects of social value such as the new extensions of DAU campus, museum, petrochemical laboratory and the new Riyadh train Station.

These types of projects, while being diversified, integrate with the thriving urban development of the society such as the first mega network of railway connections on the regional level of the Gulf States up to Mecca with Riyadh at crossroads. Certainly this would change the culture into a more dynamic transit of population and goods, provided that the emphasis of the architecture program in DAU has always been directed towards the architectural heritage scope. Further to the rational project selection, detailed investigation of the building typology with precedents of world-class case studies chosen for analysis in terms of spatial composition, structure and the human program. Parallel to the typological building research, real project experience of data collection and site analysis distribute students among the concerned developers of selected projects for client interviews and program outline. Back in studio, the collected project information along with the analyzed precedents would formulate the design problem for space programming in all what it means. Upon the project program, the design phase concentrates on creative architecture of problem-solving with the application of all gained skills throughout the study plan's

learning outcomes. The practical nature of the project invites professional juries with the public access to the gallery for real-world assessment of student performance criteria.

In the graduation project each male and female student chooses a real project with real program demands that would be one of the projects in the national planning policy of development. The graduation project is a comprehensive one that represents the learning outcomes of the student in the architectural program. The graduation project is an excellent chance for the evaluation of the level of the program. In the final jury of the graduation project, professors and faculty from other universities, practitioners and faculty members in the program are invited to attend the jury and evaluate the projects. All the jurors are asked to submit a report about the project in order to be taken into account to develop the program.

3.2.7. Indicators of the Market Study

Essential part of the program's assessment process is to study the market itself where the student-learning outcomes should orient. The program's strategy is two-sided where distinctive professionals and world class events are hosted in DAU for workshops and transferring their expertise to students, while in the meantime students are encouraged to attend professional conferences on the latest practices and conduct field works to understand the market by themselves with advising guidance. Best timing for students to tackle this confrontation is during the study plan itself for self-confidence of adapting to the market. Although the course of professional practice directly reflects the market issue in the final semester, several courses on architectural professionalism such as project management, construction documents and possibly electives with the training program are positioned prior to the graduation semester. These practical oriented experiences attempt to introduce students to the market at large. The focused course of professional practice, however, allows students to conduct research on the market practice such as registered architectural consultancies, classified contracting firms, public agencies and the authority of building ordinance with the process of building licensing.

Extensive professional market survey to investigate the Saudi market demands. The survey should structure a questionnaire on the business environment, recruitment of employees with their desired qualities. The survey can also stratify the various types of authorized offices practicing architecture in Riyadh for sampling process. Statistical and graphical representations are needed to recognize the real market needs to develop accordingly the student performance criteria. Meanwhile, The College of Architectural Engineering and Digital Design (CADD) had organized a meeting to most of the professionals and officers, including the owners of the architectural firms where our alumni are working. The opinions of attendants about the performance of our graduated architects and to what extent they are satisfying the market's needs were collected for future development.

3.2.8. Indicators of Professional Training

The program's continual ties with the community have benefited the required 60-day professional training of male and female students in training programs and collaborative projects. This training program gives the chance to our students to evaluate the program from the professional practice point of view. Also, the offices and firms in which our students are getting their training are requested to report the performance of our students and the extent that they are cooping with the practical projects demands. This remarkable experience represents the first batch of female architecture students in Saudi to perform a practical role in the society with future opportunities of permanent employment. Rigorous assessment of the training program for graduating students during summer 2013 and 2014performed intensive rubric system for learning outcomes of crash courses on architectural heritage working techniques, field works in historical sites and the participation in project works of SCTA in office and construction field.

The training program resulted in highly graded reports by both the firms in which our students are being trained and the program supervisors in coordination, especially for the performance of females. Females students were eager to prove themselves in the practical field, which confirmed the suitability of Saudi women in architecture works for the first time in Saudi history of education. Future ambitious of the program continues in this line of success, particularly for the in-progress Masters program in architecture heritage for both genders with major emphasis on practical and research skills of learning outcomes.

Also, the external training program that the college of Architectural Engineering and Digital Design is organizing this year for 20 of the architecture students to the Welsh School of Architecture will give an indication and evaluation of our program. Our students will attend the successful yearly low Carbon Architecture Summer program at Cardiff University in UK, where they will stay for extensive two weeks. The program includes low-carbon architecture projects and workshops, field visits to remarkable sustainable venues in Wales and England, architects and practitioners' lectures, all which can get our students exposed to international experience of training.

3.2.9. Indicators of Exit Survey Assessment

On the fulfillment of program requirements, including the 60-day training program, graduating students are asked to undertake the exit survey of major indicator for overall program assessment of the program learning outcomes. Statistics of the survey questionnaire provide indicators of assessing the program strengths and weaknesses, with the students' opinions on the possibilities of program improvement. Overview of the questionnaire results compares between the male and female sections, with any differences to be taken into account for future plans of coherent improvements.

3.2.10. Alumni Indicators of Assessment

The program alumni have been invited in regular meetings in the college. Their opinions about the program and the curriculum were collected based on their experience in practicing architecture and to what extend they are satisfying he markets demands. Their evaluations to the program and curriculum have been highly considered in the program development and the teaching methods and techniques. The initial indicators verifies the achievement of learning outcomes with the graduates occupying a variety of professional posts such as academic staff, professional firms and applying for graduate studies. Also non-Saudi graduates were recognized in their home syndicates with the degree obtained from the program. Future plans would strengthen the alumni community of the program with more batches yet to come.

3.2.11. Program Strengths, Weaknesses and Future Challenges

Rigorous self-assessment is taking place through internal and external measures at all levels of the program, which will be detailed later in procedures of indicators. The various committees of the program monitor the internal performance to specify strengths and weaknesses for improvement. Each faculty member is assigned to a number of program committees that review the academic performance with reporting for future plan development. This includes curricular and administrative matters at the level of detailed course components. Meanwhile, external measures are set at the university and ministerial levels to review the various aspects of program performance for evaluation and feedback of required actions. The status quo of the program's self-assessment can be summarized in observed strengths, weaknesses and future challenges.

3.2.11.1. Program's Strengths:

1. The first in Saudi to offer architectural education for female students.

The initial foundation in 2009 of the program was based on two identical sections of males and females with respective academic staff of various nationalities, thus achieving human equity of interactive learning environment regardless of race or gender while preserving the conservative society of the Kingdom. This unique formation of the program was the first of its kind for architectural education in Saudi, which has proved useful with graduates from both sections of the program. The program graduates have succeeded in occupying successful career in professional practicing. In a regular meeting with them, they have expressed their satisfying for the market needs.

2. Supportive physical resources.

Further to the architecture program's occupation of spacious premises in the main building of the prestigious DAU campus in Riyadh, the development of extra new spaces have been added to accommodate the increasing number of students enrolled to the program every year. The new plan is not just moving to another place within the same block, but redesigning the whole campus to exploit the ground level

location with exterior courtyards and interior freedom of open-plan partitioning to best suit the required environment of architectural education. Being designed and supervised for implementation by CADD's Consultancy Unit of DAU, it represents a designer-occupier project that is conceptually competitive with similar schools worldwide, while adorned with lavish state-of-the-art galleries, labs, furnishings, equipment and all other technological requirements with high quality finishing materials, which makes the educational environment of architecture equally entertaining for males and females in common.

3. Faculty members with variety of backgrounds and schools of thoughts.

The program has intentionally been working for hiring faculty members with respective academic and practical experiences and from different cultural background and different schools of thoughts. This structure of faculty gives the chance for the students to be exposed to different ways of thinking and solutions and which help in graduating a professional architect that can deal with architecture practicing problems. Faculty members and supporting staff with different cultures and backgrounds are working in extreme harmony between male and female candidates in collaborative academic duties, in a family spirit without any discrimination.

4. Supportive Financial Resources.

The program has a strong financial support by the university and this can be shown in hiring faculty members and staff, enhancing and developing the physical recourses of labs, studios and classrooms and supporting the training programs both inside and outside the kingdom. The profitable organization of DAU, together with the incentive of 50% governmental scholarships for students, make the whole university as one of the high fund-raising academic institutes in the region. Moreover, the world-class sports facilities and the university auditorium represent huge assets that can be used for more fund raising. Meanwhile, the architecture program adopts self-raising fund policy through the foundation of the consultancy unit that can increase extra funds for further CADD development.

The program also supports the faculty members financially to participate in the international and regional conferences and meetings. As an example, two faculty members have attended two conferences that were organized by one of the national universities, Kasim University. The first was in 2014, about the deconstruction and its application on the Saudi architecture, the second was in April 2015, about the heritage architecture.

5. Coherent administrative structure.

Despite the physical duality of the university comples of male and female sections, the administration is one at all levels from the top Rector office down to the student committees of CADD. The success of the administration counts for the coherence in structuring the administrative procedures, with the promotion of web-based communications and handling of documents at the whole levels of the administration. Regular program meetings and communications with voting on decision making are conducted without discrimination by gender or race. Additionally, the administration

is following the open door policy to faculty members and students. Faculty ands students can come to the Dean office at any time to discuss their problems and find solutions at once.

6. Community services.

***Organizing exhibitions*;** The College has a huge gallery near to the main entrance hole of the university and it is usually used as an exhibition of student works as an interactive space between the architecture program and the other two programs of interior design and graphic design. This gallery is used as the pivotal connection between the community at large and the CADD programs through organizing exhibitions for the society institutions and activities. The friendly environment of DAU and the seasonal exhibitions of CADD facilitate the easy access of citizens to visit the announced openings of the galleries to the public. The international events and specialized workshops are allowed for the public to join and participate effectively with their expertise or specialty in true community interaction and not just closed CADD events. Meanwhile, students and staff of the program are extroverted to the huge concentration of cultural events in the capital city of Riyadh where no event or exhibition is free from the program's representatives with effective participation in discussions and sometimes by student works.

Consultation services and participating in competitions; This mutual interaction between the architecture program of CADD and the community is enforced by establishing the consultation unit that offers a wide variety of community services such as real architectural project consultation services, participation in national competitions, research services, and also training programs. Among the program services to the community is the participation in national competitions of the design competition of hotel project in "Samhan" historical site in Alderieyah area and which is the old town in Riyadh. The program has also participated with the local government in the regeneration of Duheiyra historic area of downtown Riyadh. It was interesting that these two projects were done by the students, under the supervision of faculty members, through the design studios courses. Students were proud that they are serving their Saudi society.

More prominent examples are the assigned huge expansions of DAU campus, which include the new buildings of medical programs and university hospitals, in addition to CADD's new plan. The program has also designed and participated in the preparation of the working drawing documents and the Dean of the college is supervising the implementation of the project. The types and scale of the undertaken projects represent huge capacity of the program in offering community services.

Organizing conferences and meetings; The program of architecture has organized many conferences and meetings that all can provide a strong and successful evidence of the program participation in the community services. This has been clearly identified in the big international gathering by DAU's hostage in 2013 of the World Heritage Day under the patronage of His Royal Highness Prince Sultan Ibn Salman Al Saud, with the participation of national and international professionals and academicians in the field of architectural and urban heritage. This world-class event resulted in several MoUs, especially with the Saudi Commission for Tourism

and Antiquities (SCTA) that offered regular training programs to both male and female students of the architecture program of DAU, in addition to the students' collaboration with SCTA in the wide range of national projects for architectural preservation.

The key factor for the fast growing ties of the architecture program with the community is the physical, financial, human resources and administration of DAU who pay every effort to establish the collection of academic programs on the international level. This is made possible through the strategic auditorium of DAU that can host large scale events on the international level with state-of-the-art audio-visual facilities and comfort at the main entrance of the university campus with drop-off circulation in the central zone between male and female sections, thus forming a major community node for both DAU and the city of Riyadh as well.

The program has also organized many workshops for architectural students. Students were invited from all the architectural programs in the Kingdom to attend the workshops between which was the last one the renovation of the Al Deriah, the old district of Riyadh City. This workshop was run under the supervision of one of the famous architects in the Middle East. Meanwhile, professional practitioners participate to teach in the program and attend the juries, in addition to scheduled program of workshops that are organized to all students from all architectural programs in the kingdom.

7. Connections with national and international institutions.

The architecture program keeps strong ties with various national institutes such as The Saudi Commission for Tourism and Antiquities (SCTA), The Saudi Omran (urbanism) Society and The Saudi Council of Engineers, with extended regional ties such as the MoU with the Middle Eastern Club for Photographers. More connections on the international level include the MoU with the Politecnico di Milano University, in addition to the establishment of exchange programs with various institutes in the UK and Italy that are in progress. Also the program invites professors and faculty members from different universities to teach in the program as part-time and visiting professors. The invited professors from different national universities share their expertise to evaluate the program of architecture and participate in its development. Meanwhile, professional practitioners are invited from the Saudi market to participate in teaching design courses and attend the juries.

8. Participating in Conferences and Meetings.

The program of architecture encourages both students and staff to attend international conferences, besides the frequent events on the national level. Examples are the participation in the "Saudi Green Building Forum" in 2014 in Riyadh, and in the National Built Heritage event held in Dammam in 2012, and in Madinah in 2013. Meanwhile, the architecture program organizes a series of public lectures in DAU on sustainable architecture by invited professionals, and held workshops on the regeneration of historical 'Duheiyra' area in downtown Riyadh with open registration of architecture students from outside DAU. Among all events, the hostage of DAU in 2013 for the "World Heritage Day" anniversary for the first time in

the Kingdom represents the essence of the program's international organization and participation activities. In terms of extracurricular activities, representative student from the architectural program of CADD in 2015 has won the first prize of Best Speaker in the Inter-Universities Students Debate held in Riyadh for the Debate topic: "Metro Riyadh, is society ready?", which reflects the intellectual development of female education in the architecture program of DAU.

9. Training programs.

The program of Architecture organizes training courses for the students, both in the national and international levels. On the national level, the program requires the each student has to do summer training program for 60 days before graduating for the program. Students conduct their training in the public and private agencies that work in the building process. These agencies evaluate the student's work in a report to be submitted to the architectural program by the end of the training. Also, the students should submit a report to their faculty who will evaluate the training course.

On the international level the program has organized a training program where 20 students will go to the Welsh School of Architecture which is organizing the third international Low Carbon Architecture Summer Program (LCASP) in Cardiff, Wales, UK from 25th July until 8th August 2015. The program includes low-carbon architecture projects and workshops; field visits to remarkable sustainable venues in Wales and England, architects and practitioners' lectures, in addition to leisure excursions. This gathering will give excellent opportunities to our students to get exposed to the international experiences, both academically and practically.

3.2.11.2. Program's Weaknesses:

Although developing fast, the short time span of the architecture program is behind some weaknesses of the program such as:

1. Lack of collaborative research activities between the faculty members.
2. Limited laboratories and research facilities due to the recent program delivery.
3. A continuous market study survey is needed to identify the changing professional needs.
4. More qualified supporting staff, research assistants and lab technicians are needed.
5. Limited academic agreements with regional and international universities.

3.2.11.3. Future challenges:

Maintaining the so far achievements of the newly delivered architecture program of DAU since only 2009 is a great challenge on its own. The major challenges are summarized as follows:

1. More studies on market demands are required for future adaptation of the program.
2. Initiating postgraduate studies would further broaden the program's structure.
3. Attracting more recruitment of internationally qualified academic staff to meet the

increase in the number of students at both male and female sections, in addition to the expected activation of the Masters program in the architectural heritage by the next academic year of 2015-2016.

4. Encouraging the academic staff for quality contribution of research work and professional practicing on the international level.
5. Encouraging and developing more participation in community services.
6. Striking more agreements and exchange programs with internationally recognized institutes.
7. Obtaining the Substantial Equivalency of NAAB.
8. Maintain the ratio between faculty and students at 1:12 to keep up the educational quality in the program.
9. Establishing more labs that are needed to enhance the program's education.

3.3. Public Information:

The Department of Public Relations (DPR) in DAU is a key player in the university links with the community. The international and public events of the architecture program are organized in coordination with the DPR, which includes the formal protocol and audiovisual preparation according to the type of event with the full archival documentation in chronology of activities. One major example is the conducted NAAB first visit to DAU, with published articles in Saudi public newspapers and mass-media communications. The same department takes responsibility in collaboration with the university IT Department for the updating of the university website (http://dau.edu.sa/en) to post public announcements and presentations of scheduled events. The IT university portal extends the public information at all levels from the very public events to the most concerned information on each department level of the university. Surfing the web portal of DAU includes the information on university structure down to individual departments with all related materials. Controlled access of information is filtered according to the user permission, such as the Learning Management System (LMS) or Student Information System (SIS) services among students, instructors and administrators to download or upload and monitor the academic activities over the website. This allows the information and processing of all academic procedures to take place electronically in systematic structure.

3.4. Social Equity:

The program of architecture in DAU represents a benchmark of education in Saudi with social equity between male and female role of learning and community servicing in common. As long as student of either gender or any national or social rank has been accepted and enrolled for the program, the candidate holds equity with all others in academic and social terms. This is evident by a high percentage of female students in comparison to males in the college, where the architecture program keeps balance between female and male students with a ratio of about 1:2 respectively. Meanwhile, the students are largely mixed between Saudis and non-Saudis of both genders, which would be considered as a positive point of the program with different backgrounds and higher opportunity of culture-wise

interaction. The same holds for the faculty members who enjoy a wide variety of social and academic backgrounds with different schools of thoughts among both male and female sections, which is beneficial for the academic process with optimal experiences of program learning outcomes. The program hires on part-time basis additional professional experts and distinguished professors of architecture from other institutes in or outside Riyadh who participate actively in the academic teaching and program development, with similar rights and interaction as for the full time staff members. Incentives or benefits of any kind, being it financial or personal, are awarded on equal basis according to the deserved judgment by all involved parties to avoid bias decisions at all. Also policies of program development, including accreditation, consider open-door strategy to both national and international benchmark without segregation from the international community. The large mix of the program is reflected on the ties of student extracurricular activities and academic staff attitude that is gifted by clarity of mind in one of the most mixing situation in the Saudi education and the region as well (Table 3).

Table 3. Number of Students and Faculty Members of the Architecture Program by Gender and Nationality for the Academic Year 2014-15:

Category	Saudi National	International	Total
Male Students	260	76	336
Female Students	126	22	148
Male Staff	9	12	21
Female Staff	1	13	14

3.5. Studio Culture:

Effective Studio Culture Policy is meant to specify the rules and regulations regarding the behavioral and learning activities undertaken in the design studio during the semester. The policy has common issues among all studios of the program, with some specific considerations in vertical levels of the design studio courses. Through the Studio Culture Policy, innovation and discipline are stressed on in the studio environment for the design projects at the all stages of the study plan.

In order to set and ensure the enforcement of the Studio Culture Policy, special committee on design courses of the program has been formed of distinctive and able professionals in the field including the Dean, program Chair and expert design instructors, who took the responsibility of reviewing all design courses in terms of student performance criteria, project typology of each studio, policy and follow up on implementation. Meanwhile, related committee on physical resources of the program takes responsibility for maintaining and improving the physical condition of the design studios as an essential part of the studio culture. Furnishings, smart boards, data show, drawing tables and chairs, and meeting areas have been planned on the state-of-the-art quality standards.

The studio culture policy is also based on the student / student and student/ faculty relationships which should be based on mutual respect whatever the gender,

culture, color, religion and physical abilities. The studio culture encourage the students how to think in a creative manner using the advanced techniques but without ignoring the environmental and cultural and understanding of the society.

However, Studio Culture Policy enhance the studio environment with scintillating visions of cognitive stimulus, in addition to the Studio Culture regulations that includes:

- Time schedule of allowed working hours.
- Allowed and not-allowed stuff for students to bring in the studio.
- Strategies for teaching methods and group works.
- Plan of studio works for data-show materials, design sketches and juries during the process of design development.
- Criteria of case study analysis and design development.
- Strategies of student assessment such as conceptual sketch work, manual and digital techniques of design development, study modeling, and final presentation.
- Grading and absence reports on regular weekly basis, (students must know their standards of learning outcomes during the semester).
- Participation and enthusiasm of students in critical thinking, especially during the group discussions and juries.
- Attitude that is accepted in the design studio such as formal presentations and personal communications.
- Hygienic maintenance of the studio environment.

3.6. Human Resources:

The human resources of the architecture program are counted proportional in qualitative and quantitative balance to the students enrolled in each course of the program, with the average of 20 students per class and 12 students per design studio. The program comprises the academic staff of full, associate and assistant professors, in addition to lecturers and teaching assistances, which sustains the full range of academic ranks with their distributed combinations in course and studio participation whenever appropriate. The program is committed to recruiting world-class academic faculty of all ranks and from different educational and cultural backgrounds, thus achieving the maximum efficiency in the educational environment and the optimal performance criteria of students.

The College requirements of the architecture study plan interacts with the other Interior Design (ID) and Graphic Design programs (GDE) of CADD, where the program of architecture can be figured out from both perspectives of college and program viewpoints. From the College stance, basic design and digital media are shared among the three programs with an extended academic staff of 44-members in total. This crucial start of mixed college requirements further broadens the creative learning outcomes of cognitive, interpersonal, knowledge and digital skills of students through the specialized background of academic instructors who come from different schools of thoughts as well as combination of different specialties with optimized student performance criteria in an interactive learning environment.

Statistics of human resources for both male and female sections of the architecture program determine the average number of credits per faculty member for the registration of students in the academic year 2014-15 by course (Table 4). The average is well below the 15-student capacity for any offered course. Another observation is the more allotted students for the college requirement courses than the core architecture courses due to pooling the students of the three departments all together in college courses. Collaborative human resources of the three CADD departments at the college requirement level to meet the higher demand of student allotment effectively meet this. Meanwhile, the adjunct professor is assigned special electives and range of design courses at the various levels of the study plan (Table 5). The teaching load of faculty members is made homogenous with average 9.3 credits per fulltime faculty member compared to 6 credits for the adjunct professors.

The higher teaching loads are found among the teaching assistant staff, while the lowest loads concern the full professor rank. This load difference in credits is common among international practice of academic institutes due to the commitments of higher rank academic staff for works of specialized experiences such as time allocated to research and professional practice. Between these two extremes of fresh graduates engaged in teaching assistances and long experienced professors are found the range of lecturers, assistant and associate professors who integrate in the wide scopes of academic activities at all levels of the program. Meanwhile, the adjunct teaching load is filtered through the maximum limit of not more than 6-credits per faculty. This affords the manipulation of special expertise for distinctive employment opportunities found in specialized areas of the program, with diversified rather than focused encounters by more experts in various fields instead of few in limited scope.

Overview of the human resource statistics for the architecture program designates students to faculty ratio of 13.8, for the whole courses, which is still within the average of academic standards when seen from the larger perspective of academic advising, extracurricular activities, professional training, in addition the academic course instructing. Further breakdown of the academic staff indicates a high percentage of teaching assistance and lecturers whom hold most of smooth interlinks between the faculty staff and students in all matters of the program. Distinguishably, full professors of male and female sections represent a high percentage comparable to associates and assistances, which verifies a human resource of specialty programming towards professional student learning outcomes and not just try-and-error experimenting, especially for the unique architectural education of females in Saudi. Moreover, balanced ratio of 14% of human resource is adjunct staff of selective professors and professional experts in architectural education and practice, which optimizes the quality assurance of the program on international standards while keeping the program stability of major fulltime structure (Table 6).

Table 4. Average Number of Credits per Faculty Member for the Architecture Program in the Academic Year 2014 - 15

Course Code	Enrolled Students	Credits	Sections	Aggregate Credits
DES 101	99	3	8	24
DES 102	57	3	4	12
DES 103	92	2	8	16
DES 111	74	4	6	24
DES 112	81	2	6	12
DES 113	72	3	6	18
PHY 101	49	3	3	9
ARC 201	53	3	3	9
ARC 202	66	3	4	12
ARC 211	53	3	4	12
ARC 212	47	3	3	9
ARC 213	9	3	1	3
ARC 214	36	2	2	4
ARC 215	23	2	2	4
ARC 216	19	3	2	6
ARC 301	18	4	2	8
ARC 302	53	3	3	9
ARC 303	58	3	4	12
ARC 304	16	3	1	3
ARC 305	21	3	2	6
ARC 306	13	3	1	3
ARC 311	28	4	2	8
ARC 312	16	3	2	6
ARC 313	10	3	1	3
ARC 315	18	2	1	2
ARC 316	19	3	2	6
ARC 401	19	5	2	10
ARC 402	15	3	1	3
ARC 403	7	3	1	3
ARC 404	19	2	2	4
ARC 406	26	3	2	6
ARC 411	8	5	1	5
ARC 412	28	3	2	6
ARC 413	21	2	1	2
ARC 414	11	3	1	3

ARC 415	25	2	2	4
ARC 418	30	3	2	6
ARC 501	20	5	2	10
ARC 502	20	3	2	6
ARC 511	9	6	2	12
ARC 512	10	2	2	4
Total	**1368**	**126**	**108**	**324**
Average Num. of Credits per Each of the 35-Faculty				**9.3**

Table 5. Average Number of Credits per Adjunct Faculty Member for the Architecture Program in the Academic Year 2014 - 15

Course Code	Enrolled Students	Credits	Sections	Aggregate Credits
DES 102	15	3	1	3
ARC 213	39	3	2	6
ARC 411	15	5	1	5
ARC 418	12	3	1	3
ARC 511	1	6	1	6
ARC 301	12	4	1	4
ARC 407	15	3	1	3
Total	**119**	**27**	**9**	**30**
Average Num. of Credits per Each of the 5-Faculty				**6**

Table 6. Statistical Ratios among Instructors and Students for the Architecture Program in the Academic Year 2014 - 15

Criteria	Faculty	Students / Rank of Faculty	Percent
Instructors to Students	35	484	13.8 %
Lecturers & TAs to Faculty staff	20	35	57 %
Assis. Prof. to Faculty staff	6	35	17 %
Assoc. Prof. to Faculty staff	2	35	6 %
Professors to Faculty staff	5	35	14 %
Adjunct to Fulltime Instructors	5	35	14 %

3.7. Human Resources Development:

Since its foundation in 2009, the human resources of the architecture program in DAU has been undertaking continuous development. Recent delivery of the program, although disadvantaged by limited experiences, is privileged by building up state-of-the-art resources including the human one. This is reflected on the extended list of academic staff with all ranks shared between the three college departments in unified community of both genders (Tables 7-9). Apart from the qualified faculty recruitment, the human resource extends in scope to include administrators and the students themselves as one community of educational environment in accordance with the university's vision, mission and values, which is verified through the steady increase of student enrollment (Table 10). In this respect, the architecture program promotes several activities to develop skills of academic staff as well as students such as:

- Hosting regular exhibitions in DAU for the three departments of architecture, interior design and graphic design, where the students of architecture from both male and female sections can interact through their studio design projects in competitive demonstration of professional skills under the supervision of academic staff, and in open atmosphere of public presence.
- Organizing training courses to faculty members to develop their educational skills in teaching methods.
- Organizing lectures to the faculty members in course evaluation and assessment and grading systems.
- Participating in exhibitions outside DAU with the student works, which affords the opportunity for students to express themselves with their works in public.
- Encouragement of Academic staff as well as students to participate in academic conferences with contributions whenever possible.
- Attracting world class cultural events to take place in DAU where the prestigious university auditorium keeps welcoming selective events on national and international levels with social benefits for both the university's community and the public participation.
- Striking MoUs with professional institutes of public or private enterprises, which have mutual benefits of exchange and training programs as appropriate.
- Holding regular meetings between the university administrators and the academic staff as well as students to explore issues of concern to the program's development with strategies of their fulfillment.
- Inviting distinguished professionals for workshops and public lecturing in DAU with faculty participation and discussions.
- Conducting training programs for students in real world experiences, especially with The Saudi Commission for Tourism and Antiquity (SCTA).
- Establishing Architectural Consultation Unit of particular interest in developing the human resource of the architecture program, where students together with the faculty members practice the architectural profession in real services to the community with the participation in design competitions and also conducting professional training programs in DAU.

Beyond the intrinsic development of the program, the university administration is represented by The Office of Vice Rector for Quality and Development (VRQD) that takes responsible for drawing strategies of the university's plans of development with the human resource in process. The VRQD's scope of work includes the regular reporting on the self-assessment of integrated university performance with special regard to the following criteria:

1. Mission and objectives
2. Governance and administration
3. Management of quality assurance and improvement
4. Learning and teaching
5. Student administration and support services
6. Learning resources
7. Facilities and equipment
8. Financial planning and management
9. Employment processes
10. Research
11. Institutional relationship with the community
12. Recommendations

According to the VRQD self-assessment processes, the recommendations translate into action plan for improvement and sustainability, which is centered on the human resource development for all parties of administrative, faculty and student concerns. Meanwhile, the Strategic Planning and Quality Assurance Unit of VRQD works in connection with the Unit of Quality Assurance for each college including CADD, thus managing the VRQD from top university level down to the college and program levels. The same VRQD office organizes regular workshops to train the academic staff on the LMS usage for effective course delivery, in addition to teaching strategies with the process of developing the comprehensive 'course file' document for accreditation.

Table 7. CADD Fulltime Academic Staff with Current Teaching Load

#	Name	Title	Gender	Dept.	Load (CR)
1	Ayman Al-Musharaf	Assistant Professor - Dean	M	ARCH	-
2	Nada Al Nafea	Assistant Professor – Vice Dean	F	ARCH	-
3	Gamal Elkhouly	Professor – Vice Dean	M	ARCH	14
4	Anna Laura Petrucci	Professor – ARCH Program Chair	F	ARCH	9
5	Ma'ad Aldelamy	Professor	M	ARCH	17
6	Mamoun Hammosh	Professor	M	ARCH	13.5

7	Mustafa Ramadan	Associate Professor	M	ARCH	16
8	Ali El Shazly	Associate Professor	M	ARCH	15
9	Rania Fawzi Mohamed	Associate Professor	F	GDE	9
10	Inas Rasheed	Assistant Professor	F	GDE	10
11	Diala Tabbal	Assistant Professor	F	ARCH	12
12	Sultan Alotaibi	Assistant Professor	M	ARCH	12
13	Dina Nafadi	Assis. Professor – GDE Program Chair	F	GDE	9
14	Oonagh McDonnell	Assistant Professor	F	ID	11
15	Hind Othman	Lecturer	F	ARCH	13
16	Jabran Zafer	Lecturer	M	ARCH	16
18	Albertina Saseta Naranjo	Lecturer	F	ARCH	14
19	Joanna Feidi	Lecturer – IDE Program Chair	F	ID	10
20	Lamiaa El-Feky	Lecturer	F	ID	15
21	Samar Zeiada	Lecturer	F	GDE	14
22	Hanaa Dasan	Lecturer	F	ARCH	13
23	Juwayria Mahdi Osman	Lecturer	F	ARCH	10
24	Maya AlTayyar	Lecturer	F	ID	15
25	Samia Ayyoub	Lecturer	F	ARCH	11
26	Marta Giminez	Lecturer	F	ARCH	12
27	Majed Al Abd	Lecturer	M	ARCH	20
28	Farheen Nour Khan	Lecturer	F	ID	14
29	Doha Anqawy	Lecturer	F	ID	12
30	Mohamed Al qahtani	Lecturer	M	ARCH	13
31	Eiman Moheb	Lecturer	F	ID	13
32	Noura Al Khanini	Lecturer	F	ID	16
33	Francisco Casas Cobo	Lecturer	M	ARCH	15
34	Dima Afisa	Lecturer	F	ARCH	8
35	Sadd Alotaibi	Lecturer	M	ARCH	19

Table 8. CADD Teaching Assistant Staff with Current Teaching Load

#	Name	Title	Gender	Dept.	Load (CR)
1	Hena Wasef	Teaching Assistant	F	ID	13
2	Anas Hussein	Teaching Assistant	M	ARCH	22
3	Bodoor Al Sweiyeh	Teaching Assistant	F	GDE	16
4	Barera Iqbal	Teaching Assistant	F	ARCH	14
5	Arwa Al Rashed	Teaching Assistant	F	GDE	16
6	Mohanad Alqhtani	Teaching Assistant	M	ARCH	14
7	Sadeem Al Eisa	Teaching Assistant	F	ID	22
8	Almasah Raihan	Teaching Assistant	F	GDE	12
9	Sana Maan Merhi	Teaching Assistant	F	GDE	20
10	Ghieath Alshawa	Teaching Assistant	M	ARCH	17
11	Mohannad Bawadekji	Teaching Assistant	M	ARCH	12
12	Sarah Alabbad	Teaching Assistant	F	ARCH	16
13	Luisa Granados	Teaching Assistant	F	ARCH	19
14	Lamiaa Al mubarak	Teaching Assistant	F	ARCH	13
15	Dalia AlAkki	Teaching Assistant	F	ID	14
16	Hajer AlGhamdi	Teaching Assistant	F	GDE	18
17	Bayan Ibrahim Arnous	Teaching Assistant	F	ID	16

Table 9. ARCH Program Adjunct Academic Staff with Current Teaching Load

#	Name	Title	Gender	Dept.	Load (CR)
1	El Sayed Amer	Distinguished Professor	M	ARCH	9
2	Ahmed Toman	Assistant Professor	M	ARCH	6
3	Hamad AL Lhaydan	Professional Architect	M	ARCH	5
4	Abdel Muhssen Al Karni	Assistant Professor	M	ARCH	6
5	Pedro Vallina	Professional Architect	M	ARCH	4

Table 10. Chronology of Student Enrollment in CADD

Academic Year (1^{st}/2^{nd} Sem.)	Architecture		Interior Design (Fem. Sec.)	Graphic Design (Fem. Sec.)	Total
	Male Sec.	Female Sec.			
2009-10	16/27	14/18	26/42	23/26	113
2010-11	54/63	44/53	82/83	52/71	270
2011-12	106/120	62/72	121/129	94/94	415
2012-13	171/183	82/86	147/139	110/120	528
2013-14	243/278	110/122	152/147	121/129	676
2014-15	336/000	148/000	194/000	143/000	821/000

3.8. Physical Resources:

The architecture program is fortunate by executing the new place of CADD on the highest physical standards and facilities. Further to the original physical resources, which were included in the Institutional Overview (IO) of NAAB visit-I, the new plan occupies the lower floor of DAU footprint with its two wings of male and female sections. Abundant spaces of the new plan accommodate all necessary requirements for CADD's existing as well as the future expansion of human and physical resources (Figures 1 & 2). The spatial program of the plan includes design studios, laboratories, galleries, auditoriums, libraries, offices, meeting rooms and others (Table 11). Creative design exploits the open spaces of the bottom floor as open courtyards in integration to the spatial organization of the college, thus achieving human and environmental livability with universal spaces of unobstructed functional flow. The new extension is now executed and ready to receive the visitors of NAAB visit-II.

On the DAU context, the strategic location at the intersection of Riyadh's Northern and Western Ring Roads facilitates the accessibility of the university at the city level, with convenient environment of studying and living. A spacious car parking area for students is located within the university campus, with drop-off spaces and shaded parking. Residential facilities of the university spread around within walking distances for apartment-type of housing. Landmark Mosque of Dar Al Uloom is located at crossways of the university campus. The university complex is composed of a wide symmetrical four-story super structure, which reflects the dual spaces of equal facilities for male and female sections. The University administration overlaps with the two zones, while the central state-of-the-art auditorium of about 1500 seats that is designed to accommodate major conferences and ceremonial events, such as the annual graduation ceremony and international academic conferences with audiovisual proficiency.

The complex accommodates four colleges, including CADD in interactive learning environment. Besides the hardware of high-quality furnishings, finishing materials, digital and audiovisual equipment for the whole university spaces in general, and CADD's new premises in particular, the software of IT facilities integrate the university activities through the website of DAU (http://dau.edu.sa/en), LMS System of the course works, SIS System of Academic procedures for students and staff, and E-mailing system for students and staff. Meanwhile, the Deanship of Admission and Registration is located at the first two floors of the complex to process the study plans of all university programs.

Table 11. Brief Space Program of the New CADD Plan

Description of use	Quantity	Area (sq.m.)
Design Studios	26	2210
Faculty and Staff Offices	60	2600
Meeting Rooms	4	80
Laboratories	6	320
Workshop/ Material Shop and Storage	2	360
Galleries	2	360
ARC Libraries	2	180
Consultation Unit Spaces	2	1300
Auditoriums (48 seats each)	2	180
Courtyards	2	480

Figure 1. DAU Floor Plans and Space Designations

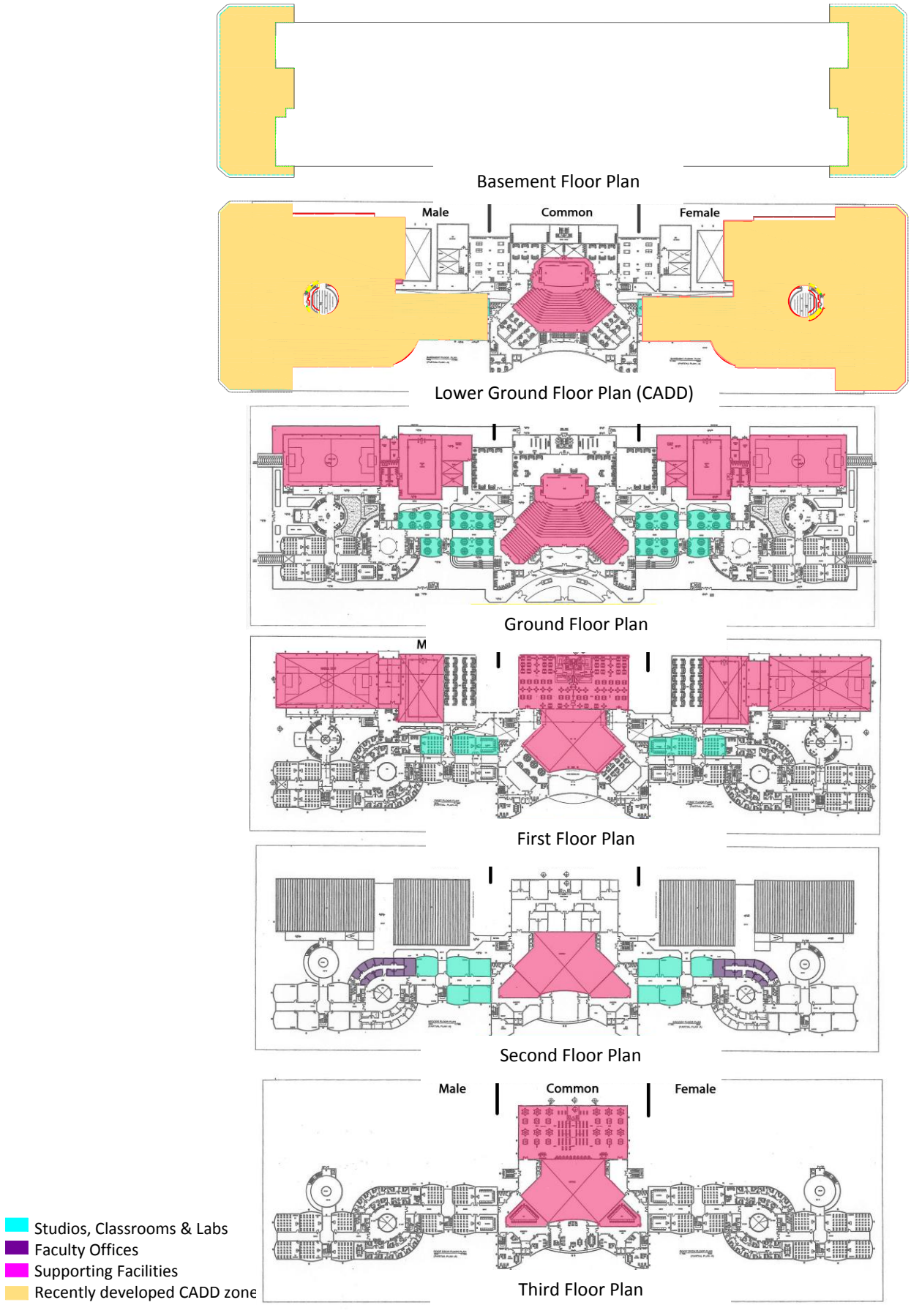
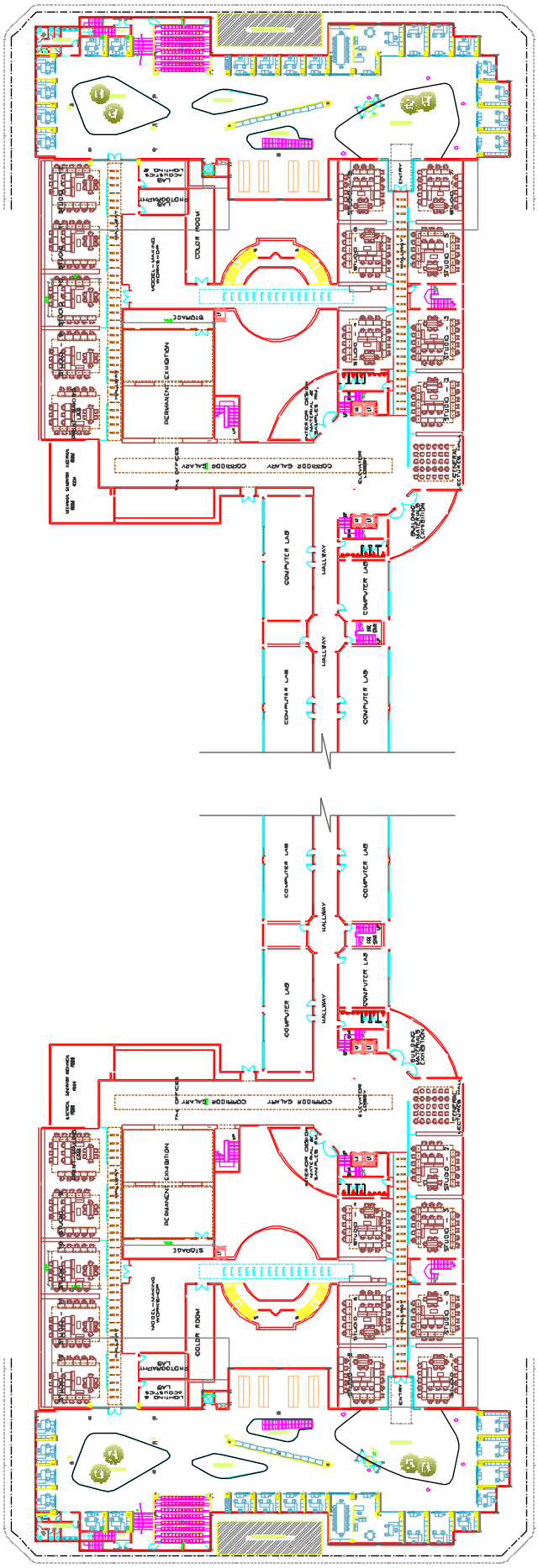


Figure 2. CADD Exclusive Zone within DAU Building



3.9. Financial Resources:

In support of the mission of the University, services of Financial Resources play an important role in ensuring the institution's financial capacity and viability. The financial department of the university works to increase and better-manage the financial resources for meeting DAU's objectives in supporting all needs of the colleges and academic programs, which would create the optimum academic environment for student performance. The strong university support to CADD is evident by the new plan being exclusively executed for the college with state-of-the-art equipping and furnishing according to the highest international standards. All studios, labs, galleries and auditoriums are supported with the most advanced technical facilities. The university also supports the college including the architecture program by recruiting qualified faculty members from different cultural backgrounds and different schools of thoughts to keep the ratio between faculty and students within the accepted international ratios.

This collaborative effort aims to meet all stewardship and strategic planning responsibilities by focusing on core accounting, financial policy development and enforcement, and financial risk management. Each of the services ensures the planning and sound management of financial resources for the whole University through:

a. Offering financial management services in an efficient manner (specialized services in financial analysis and advice);
b. Supporting pro-actively senior managers at the University, faculty and service levels, by providing adequate, specific and timely financial information to assist in the decision-making process;
c. Using effective methods and systems for collecting, retrieving and releasing financial information.

The university income depends mainly on the following recourses;

a. The Ministry of Higher Education supports at least 50% of the registered students within the scholarship program Students under Scholarship Program.
b. The fees paid by Students themselves.

In addition to the above resources, the university is aiming at raising more self-funds by exploiting the physical recourses and facilities, but in the meantime keeping and maintaining the privacy of the students, using the intelligent design of the university complex which help to achieve this intention. The physical recourses, which can be used for self-raising funds are:

a. The university auditorium
b. The university gymnasium, swimming pools and sports halls

In CADD, there are 484 students in the architecture program. Income coming straight from their average registered credits per semester is about (484 *17 Credits *2450SR = 20,158,600 SR.)

According to DAU's detailed report on the financial resources of CADD for the two successive years 2014 and 2015, the total revenues had reached 49,396,098 SR in average compared to 16,401,854 SR of average expenditures. Although the expenditures had increased by 17% from 15,092,786 SR in 2014 to 17,710,922 SR in 2015, but the income had decreased by 2% from 49,773,101 SR in 2014 to 49,019,096 in 2015, which reflects DAU's vision of excellence in educational standards regardless of the ratio between the decreased income and increased expenditures for the last two financial years. This is clearly demonstrated by the huge increase of 170% of added CADD's liquid assets that had reached 9,142,275 SR in 2015 compared to 3,384,641 SR in 2014 for the new construction of laboratories and studios in addition to the other facilities. Meanwhile, DAU's current financial year 2016 that ends in July 31st is expected to credit 4,800,000 SR for more CADD expenditures on the turn-key and operation of the new plan.

With respect to the financial report, the number of students indicates the major source of income for CADD through both the students sponsored by the Ministry of Education (MOHE) and the self-funded students. On one hand, the revenues of CADD's students sponsored by MOHE had reached 34,896,403 SR in 2015 compared to 33,804,302 SR in 2014. On the other, the revenues of CADD's self-funded students totaled 13,639,086 SR in 2015 compared to 15,473,799 SR in 2014. Therefore, the governmental sponsoring of students represents the heavy steak of revenues for CADD, while the self-funded students comes second. These figures emphasize the extreme interest of the Saudi Government to invest in the education of Saudis to meet the sustainable policy of development in general, where the building and construction sector represents one of the corner-stones of development in specific. Thus, the educational opportunity of international standards offered through CADD is one of those tools to sustain the Saudi development through both the Governmental and private institutes as well. In addition, the self-funded students provide another opportunity of Saudis and non-Saudis to join CADD of highest educational standards as offered in the developed world. Nevertheless, the foundation of CADD in 2009 had been supported by a lump-sum of Governmental grant of 8,351,600 SR besides the on-going student grants.

The running cost of CADD extends from the basic salaries of human resources to the maintenance and other miscellaneous expenses such as the extra-curricular activities. The increase of CADD's highest expenditures on salaries from 10,735,361 SR in 2014 to 13,496,636 SR in 2015 proves the qualitative and quantitative hiring of faculty members from various backgrounds to enrich the educational environment. This comes at the time when the net income of CADD had decreased from 34,680,315 SR in 2014 to 31,308,174 SR in 2015. This net income of CADD affords the expenditures of the college and also the shared facilities of DAU such as the auditorium and dry/wet sports halls. The miscellaneous expenditures although small in amount, but extends from the equipment of offices to the telecom and postal services. Also the Government requires some annual administrative fees. More expenditures include the mass media announcements and advertisement, training programs and educational activities of human resources and consultancy services for CADD development. Meanwhile, the new CADD plan has been planned and executed on separate basis of expenditures due to its special consideration as part of the DAU building assets apart from the future running cost.

Overview of CADD's financial resources demonstrates the relaxed expenditures compared to the revenues owing to the initial Governmental grant and the high percentage of running student grants as well. This has afforded the hiring of active academic staff and consultancy services with state-of-the-art physical resources for CADD development on the international standards. The detailed report on the financial resources has proved the irrelevance of decreasing income versus the increasing expenditures, which is still far below the deficits of financial capabilities of CADD for long-term sustainability and reserved assets for the future.

3.10. Information Resources:

The fast growing library of CADD has targeted the increase of the number of books and periodicals from few hundreds since 2009 to more than 3000 in 2015. This increase has been correlated with the gradual opening of new courses until the graduation of the first batch in spring 2014. The increase of the library's collection in CADD is a continuous process with feedback from course instructors on the recommended list of books to be added. Meanwhile, the development of E-library is getting more potential for initiation with full access to CADD information including books and membership of specialized journals. The starting of the post graduate studies of the architecture program in the next academic year 2015-2016 certainly would boost the development of CADD library by distinctive collection on the level of graduate studies and to be more selective in terms of author, publisher, year published and professional reviewer comments.

The IT development of CADD is upgrading the existing website over the DAU portal through a new IT contracting for state-of-the-art technological web presence with some of the dynamic and interactive features made available. The main focus is to get productivity from the web presence, provide up-to-date information to CADD members with excellent graphical structure and user-friendly navigation. A well-structured website is built for the visitor to save spending time in browsing, searching, sending information, giving their feedback. The user-friendly system in conjunction with advanced features for targeted audience would facilitate the smooth flow of information for the visitors to scroll news/events with calendar. Overview of basic navigation includes home items such as academics, student life, alumni and admissions with online application, inquiry and career jobs. The new CADD website integrates with the existing site of DAU for the systems of Learning Management (LMS), Student Information (SIS), Human Resource Management (HMS), Financial Management (FMS), in addition to two major electronic facilities of Library Information System (LIS) and Document Management System (DMS). The former accesses the digital services of CADD library that is expanding in the number of volumes and membership of academic websites with special emphasis on the research facilities and loaning information. The latter of intranet service handles all the documentation processes over the web with controlled login access according to the type and nature of each document.

Further to the two main information resources of CADD library and IT facilities, more laboratories, workshops, studios, auditoriums and offices of green human spaces have been implemented in the new CADD physical resources, which are equipped with the latest electronic devices of hard and software installations for audiovisual and electronic communication facilities, thus enriching the information resources of the architecture program on the highest international standards. Specifically, the computer labs of the new CADD spaces are designed to accommodate the special qualitative as well as the quantitative requirements of the digital design in the college. This includes the widest scope of digital applications and smart learning, which enrich not only the skills of computer drafting but also the computer applications for a wide range of technical and theoretical learning outcomes of the interactive study plans among architecture, interior and digital design, thus enjoying a friendly user environment of architectural education.

3.11. Administrative Structure:

The architecture program represents an independent structure of decision making yet belongs to the hierarchal structure of college and university framework (Figures 3 & 4). In this process, the Department Council passes the agenda of divided topics into department affairs and student cases for discussions during the regular meetings twice a month. Recommendations are taken according to the voting majority in the attendance of at least two-third of the Council members of Ph.D. holders. In case of any dispute, the topic is referred to the Dean for further investigation at the College Council level. Any recommendation of the ARCH Council would be processed according to the university rules and regulations, and after the Dean's approval. Decisions granted only to the University Council such as student request of dismissal removal would follow the forward hierarchy of Department – College – University reporting with feedback for implementation. Specific student cases such as block removal or grade objection requests have to be supported by official documents to verify the case otherwise rejected. The Council may require the concerned instructor or supervisor to submit formal report on any inquiry of student cases. Again in case of disagreement, a special committee as appropriate to the topic is set to review the case with justified recommendation for the Council's final decision.

Parallel to the Department Council, faculty members are assigned to committees of:

- Committee of Reviewing and Development of Academic Plan
- Committee of Student Affairs
- Committee of Physical Resources

The committees are nominated by the ARCH Council for handling the wide range of topics of concern to the program's academic process with recommendations reported monthly to the Council for enforcement. For example, the Committee of Student Affairs conduct initial review of student cases to be further processed through the Department Council, and works closely with the Student Council to convey their requests or opinions for appropriate actions. Extended Course Committees nominate the faculty members by specialty to investigate thematic courses of the program in peer review with the course coordinator and instructor, thus ensuring the achievement of NAAB's student performance criteria in each course according to rubrics of assessing the domains of learning outcomes, in addition to the verification of appropriate course material such as lecturing notes, textbooks, assignments and the ongoing improvement plans.

Higher level academic committees are formed on the College level, which concern the three departments of CADD in common. These Committees are:

- Committee of Program Accreditation and Development (CPAD)
- Committee of Student Affairs
- Committee of Extracurricular Activities
- Committee of Academic Advising
- Committee of Archiving

Each of the CADD committees includes nominees representing the three college departments and headed by senior faculty member. Of major concern to the architecture program is the Committee of Program Development and Accreditation (CPAD) which includes; The Dean (Head of the Committee), Vice-Dean, Senior International Consultant whom also is NAAB expert, the three Department Chairs, and a secretary to write the minutes of regular weekly meetings. Obviously the assigned members to the committee reflects the policy making towards the college programs, with major emphasis on the architecture program for both NAAB and national NCAAA accreditations in progress. Among the CPAD activities are the program benchmarking for self-assessment and development, follow-up on the development plans of each department, preparing the action plans for accreditation, conducting workshops to the faculty members on NAAB criteria and procedures, meeting with male and female students to introduce the importance and requirements for NAAB accreditation, meeting with the University executives for the same accreditation purposes, and conducting all correspondence of CADD with the international and national communications for the programs development and accreditation.

The CPAD activities extend to opening new programs of CADD such as the Masters program in Architectural Heritage that is under revision and planned for next academic year 2015-16, and the Architecture Engineering (AE) program in parallel to the current ARCH program that has been approved by the University Board of Trustees and forwarded to the Ministry of Higher Education for final approval and commencement in the next academic year (program of physical space included in the new CADD plan), and monitoring the student performance criteria in connection with all the faculty members of the college. Recently, the CPAD has been engaged in developing the study plan of the architecture program and the other two programs of interior design and graphic design as well. The architecture study plan has been updated with more credits of computer graphics and technical applications with more elective pooling, while reducing or moving to the elective pool of any unnecessary credits, thus ending up in more efficient plan. Meanwhile, the three study plans of architecture interior design and graphic design are viewed in parallel to have shared university requirements with basic design courses of college requirements at the early stage of study plans for students' optimal freedom of choice in the latter tracking of major core program.

Parallel to the CPAD, other CADD committees cover a wide range of College responsibilities and activities such as cultural, academic, social and sports events to develop the student personality in pedagogical manner. The Committee of Academic Advising designates each enrolled male or female student to an academic advisor who takes the full responsibility of following up on the student's achievement in the study plan with the proper registration in each semester, in addition to offering the advice and attempt resolving any student matter of social or personal nature. Moreover, the Committee of Extracurricular Activities has crucial role in the intellectual development of students in all college programs to share knowledge and experience of a wide range of activities such as public lectures of thematic topics by invited professionals and professors, participating in national and international events of academic conferences and workshops, contributing to public galleries by student works and conducting field trips for educational and recreational activities.

Figure 3. Organizational Structure of ARCH Program

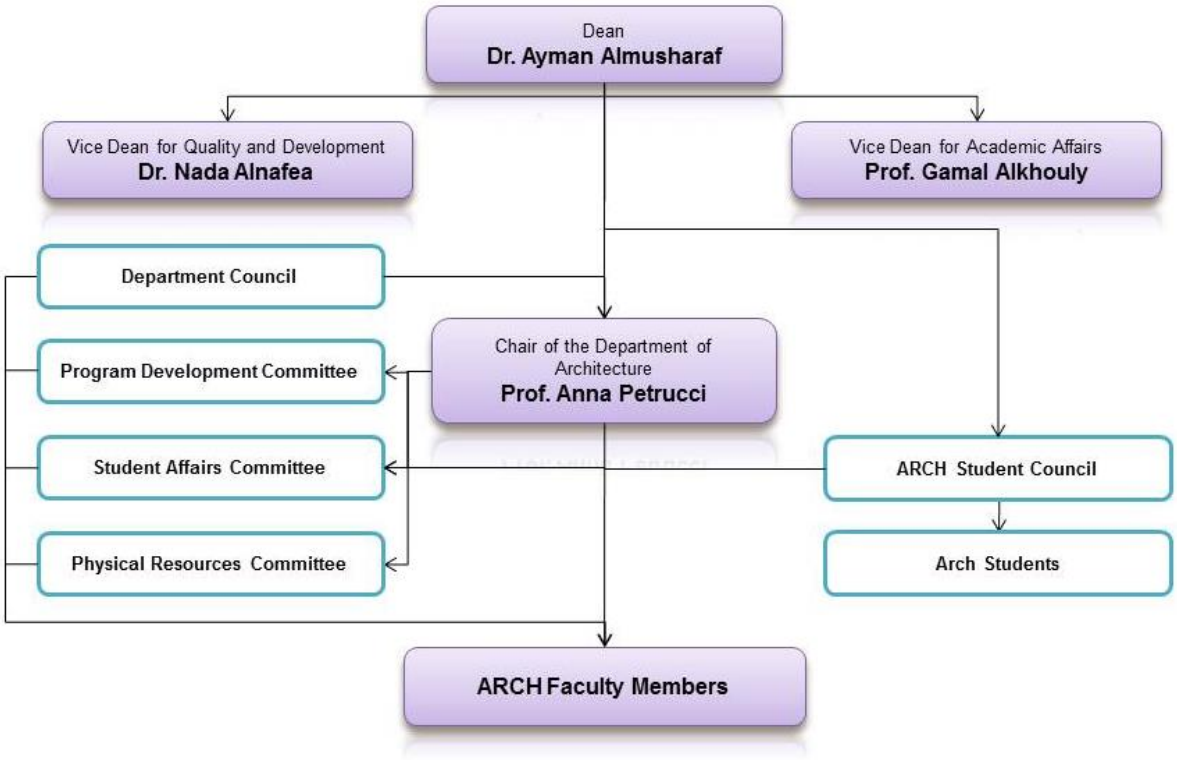
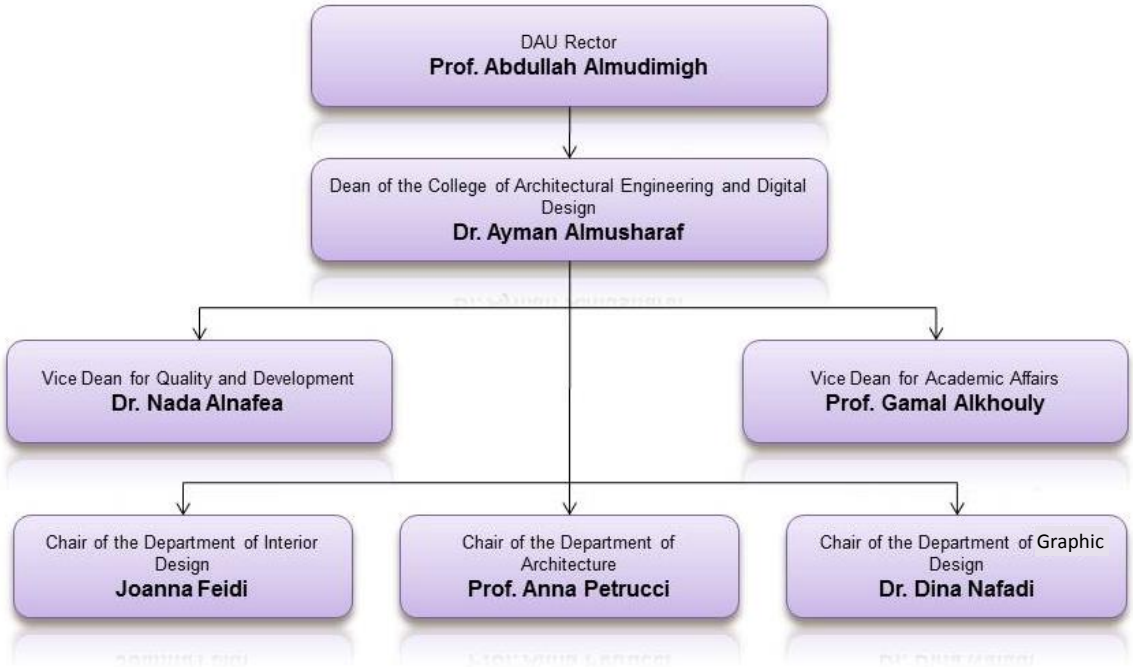


Figure 4. Organizational Structure of CADD



3.12. Professional Degree and Curriculum:

The program curriculum is being assessed and evaluated by the Vice Rector for Quality and Development Strategic Planning and Quality Assurance Unit, with CADD's Committee of Program Development and Accreditation, in association with the program's Committee of Reviewing and Development of the Academic Plan and the Course Committees. This means that the program of architecture is thoroughly assessed and managed in continuous process of development at the four hierarchal levels of University, College, Department and Course levels with their interrelations for coherent professional degree and distinctive curriculum of architecture. Overview of holistic strategies for the program resulted in establishing the Consultation Unit with enforced Training Program of students, beside the latest Curriculum review throughout the 2014 calendar year with improved study plan on the international NAAB benchmark standards, without which the optimized learning outcomes of the architecture program in DAU could have never been achieved.

3.12.1 Consultation Unit:

CADD has recently established the Consultation Unit and headed by the Dean. Through this unit, students participate with the faculty members in consultation services for the community, in addition to research and training programs. Although seen as of profitable strategy for CADD, the student participation affords an unparalleled measure of achieving the student performance criteria of the NAAB accreditation itself, with in-house practice of real projects for real learning outcomes under the supervision of faculty members. The same Consultation Unit provides services of research work and training programs, something largely uncertain to achieve at the Bachelor-level education especially in the Arab region. The consultation enterprise can help to develop the research skills of students in how to approach the problem solving through logical methods and applied theories of real given problem for real solution to the community, while being qualitatively controlled under guidance of the supervising program instructors with outstanding experience of program's student performance criteria. Finally, the crash Training Programs targets the community at large where the expertise found in or invited to the program can play a major role in developing specific skills related to the field of study such as IT, heritage, management, civil, urban or landscape specialty skills. Certainly students of the program can benefit from the training programs as they choose, with performance criteria further to the limited class materials. Left to say is the fund-raising for DAU with the people affiliated to CADD.

3.12.2 Practical Training Program:

Sending students to the field is self-evident in orienting the program's student performance criteria towards the market demands. The ARCH program adopts the training program requirement, where each student should spend minimum 60-days of training in professional practice (such as a certified architectural office) as partial requirement for graduation. The training may span during the last two years including summers of the study plan. This training has no credit hours where each student presents his or her training experience with a working report and certified letter of completion to the program supervisors. The students are not allowed to register for

any other courses during the summer practical training. Upon the training program the student submits a detailed and comprehensive report, and evaluated by specialized committee with the recommendation submitted to the faculty Board for approval.

The training content explores the architectural practice within the Saudi context or elsewhere. In objective, the program encounters organizational and managerial responsibilities of providing professional services to the society where the program is undertaken. The program prepares students for future registration as a professional member of the Saudi Council of Engineers.

During the training program, the students are asked to;

- Deal with practical architectural problems using systematic ways of problem-solving.
- Perform any duties as assigned by the workplace supervisor.
- Gather, analyze and interpret data using a computer technology.
- To accept and train for working in a team of different disciplines.
- Use the proper presentation techniques to illustrate his or her ideas for proposed solutions.

The major intended learning outcomes of the program's field experience are;

- Develop clear drawings; write specifications to identify the appropriate components, building materials and systems for building design.
- Develop project work plan and detailed schedule of deliverables through all the design stages.
- Use of acquired techniques, skills, and modern engineering tools necessary for architecture practice.
- Illustrate the values, diverse needs, behavioral pattern, cultures, and, physical abilities and the implication of diversification on the architect's responsibilities.
- Describe the architect's skills and techniques required to work in collaboration with other disciplines in the building design, construction, and operation stages.
- Identify the responsibility of the architect to reconcile the needs of the community in terms of building codes accessibility laws and environmental regulations.

3.12.3 Curriculum:

Curriculum chart of the architecture program identifies the vertical as well as the horizontal distribution of curses in matrix manipulation (Table 12). The chart identifies critical-path of design studios, which spans the time schedule of 5-yrs study plan. Further details of the chart identify the co- and pre-requisites of vertical courses as well as horizontal ones in parallel. The architectural cornerstone of design courses sieves the curriculum into various paths of chronological development up to professional practice. In one path, humanities introduce the social design issues of the natural environment in historical context with theoretical debate. In another, technicalities of construction examine the buildability of design in quantitative as well as systematic methods. Graphical tools of digital media, nevertheless, represent the software of conceptual design, in addition to the hardware of building systems. The critical path of skilled design itself forms the spinal curriculum from visual studies up to comprehensive functionality.

The bell-shaped distribution of the study plan over the five-year span considers minimal load to start and end with. Starting freshmen year introduces students to the university life through University Preparatory Program requirements, with visionary basic-design skills introduced at the second half. Wide-range of courses provides students with shared learning experiences by DAU and CADD staff in multidisciplinary preparatory knowledge. University requirements, however, continue to offer vertical courses at later stages of the study plan such as English. On the contrary, CADD requirements end up at the third semester where the core program overlaps and takes over. The core program peaks towards the mid study plan, while the lifted load at the final year concentrates on Graduation Project research and design studio. The graduation project is supported by professional practicing and electives of advanced architectural topics (Tables 13).

Detailed sorting of courses by program requirement measures around one-fifth as University requirements compared to over one-tenth for College requirements, with the major remainder allotted to the core program including the elective courses (Tables 14 - 17). The high percentage of university requirements emphasizes the English studies for reading, writing and conversation. Thus, facilitates the student learning outcomes in worldwide communications with comprehended course materials that are defined for the entire program in English. The compulsory programs of core and elective courses reach up to two-third of the program percentage. Though extensive, this is the most flexible part of the curriculum where the continuous process of benchmark revisions takes place. In 2014, the core program got enhanced at both program and course specification levels. While the program has been limited to minor refinements, the course level provides ground for extensive upgrading on the international standards of detailed learning outcomes.

The elective pool plays the major role of adjusting the core program development, where new course entry according to the benchmarking criteria finds way in elective choice. Students of the ARCH Program are required to study elective courses of total 8 credit hours. The students may select any of the elective courses offered by the architectural program. Meanwhile, the students have the possibility to study up to 4 credit hours of free electives, on approval by the ARCH Council. The architectural electives encompass three main fields of specialization, which are the computerized driven architectural skills, theoretical diversity of the design profession at both architectural and urban scales, and environmental control courses. The range of electives emphasizes the program objectives and learning outcomes of enabling students at the highest level to solve design and project related problems creatively based on sound architectural principles and utilization of digital media.

Overview of the study plan defines the spine of design studio courses that extends from the college requirement of shared design courses among the existing three programs of the college up to the core architectural graduation project with supportive co-requisites at each design studio level of the study plan. Meanwhile, the core architectural program intensifies theoretical courses at the early stage of the study plan with more technical and management courses towards the latter stages of the study plan, together with the practical training program in summer of the final graduation year, thus achieving the smooth transition from theoretical background to technical and practical professionalism of architecture education.

Table 12. DAU Curriculum for the Bachelor of Architecture (166 CR)

Year			Freshman		Sophomore		Junior		Senior		Graduation	
Semester			First	Second	First	Second	First	Second	First	Second	First	Second
Courses	Univ. Req. (35 CR)	Physical Educ.	PE 101	PE 102								
		Personal Skills	SKILL 110				SKILL 120					SKILL 121
		Language Skills	ENGL 111		ENGL 121				ENGL 123	ENGL 122		
			ENGL 112		ARAB 101			ARAB 102			ISLM 101	
			ENGL 113									
		Math	MATH 100	MATH 101								
		Basic Comp.	CS 100									
	College Req. (21 CR)	Physics		PHY 101								
		Basic Design & Computing		DES 101	DES 110							
				DES 104	DES 120							
				DES 105	DES 103	ARCH 213		ARCH 313	ARCH 403			
	Program Req. (110 CR)	ARCH Design		DES 106	ARCH 201	ARCH 211	ARCH 301	ARCH 311	ARCH 401	ARCH 411	ARCH 501	ARCH 511
		History & Theory			ARCH 202	ARCH 212	ARCH 302	ARCH 312		ARCH 412	ARCH 502	ARCH 512
		Construction				ARCH 214	ARCH 304	ARCH 314	ARCH 404	ARCH 414	ARCH 503	
		Materials & Env.				ARCH 215	ARCH 303	ARCH 316	ARCH 402			
		Structural				ARCH 216	ARCH 306			ARCH 415		
		Urban & landscape					ARCH 305	ARCH 315		ARCH 413		
		Electives							ELECT.I	ELECT.II	ELECT.III	ELECT.IV
Total Credits			**15**	**16**	**18**	**18**	**18**	**18**	**18**	**18**	**15**	**12**

Table 13. Architecture Program Study Plan (166 CR):

First Year (Freshman)							
CS	100	Introduction to Computers	1	DES	101	Design Foundation I	3
SKILL	110	Learning Skills	1	DES	104	Descriptive Drawing I	2
MATH	100	Elementary Mathematics	4	DES	105	Freehand Drawing	1
PE	101	Physical Education 1	1	DES	106	Color Theory	2
ENGL	111	Oral Communication I	3	MATH	101	Mathematics I	4
ENGL	112	Grammar	2	PHY	101	General Physics	3
ENGL	113	Reading & Writing I	3	PE	102	Physical Education 2	1
			15				16
Second Year (Sophomore)							
DES	110	Design Foundation II	3	ARCH	211	Architecture Design I	4
DES	120	Descriptive Drawing II	3	ARCH	212	Theory of Arch. I	2
DES	103	Digital Photography & Image Process.	3	ARCH	213	Architectural Computing	3
ARCH	201	Introduction to Architecture	2	ARCH	214	Building Construction I	3
ARCH	202	History of Arch. I	2	ARCH	215	Construction Materials	3
ENGL	121	Oral Communication II	3	ARCH	216	Statics	3
ARAB	101	Arabic Language Skills	2				
			18				18
Third Year (Junior)							
ARCH	301	Intermediate Design Studio I	4	ARCH	311	Intermediate Design Studio II	4
ARCH	302	History of Arch. II	2	ARCH	312	Theory of Arch. II	2
ARCH	303	Environmental Control	2	ARCH	313	3D Modeling & Rendering	3
ARCH	304	Building Construction II	3	ARCH	314	Concrete & Steel Construction	3
ARCH	305	Landscape and Site Planning	2	ARCH	315	Principles of Urban Planning	2
ARCH	306	Structural Analysis I	3	ARCH	316	Architecture of Arabian Region	2
SKILL	120	Critical Thinking & Problem-solving	2	ARAB	102	Arabic Language Writing	2
			18				18
Fourth Year (Senior)							
ARCH	401	Comprehensive Design Studio I	4	ARCH	411	Comprehensive Design Studio II	4
ARCH	402	Sanitary & Technical Installations	3	ARCH	412	Humanities in Architecture	2
ARCH	403	Lighting and Acoustics	3	ARCH	413	Community Housing Design	2
ARCH	404	Construction Documents I	3	ARCH	414	Construction Documents II	3
ENGL	123	Reading & Writing II	3	ARCH	415	Soil Mechanics and Foundations	3
ARCH		Elective I	2	ENGL	122	IELTS Exam Preparation	2
				ARCH		Elective II	2
			18				18
Fifth Year							
ARCH	501	Advanced Design Studio	5	ARCH	511	Graduation Project	6
ARCH	502	Graduation Project Research	3	ARCH	512	Professional Practice	2
ARCH	503	Project Management	2	SKILL	121	Leadership & Teamwork	2
ISLM	101	Introduction to Islamic Doctrine	3	ARCH		Elective IV	2
ARCH		Elective III	2				
			15				12

Table 14. Preparatory Program (UPP) Courses:

Course Code		Title	Credits	(LT, LB, CR)
CS	100	Introduction to Computers	1	(0, 2, 1)
ISLM	101	Introduction to Islamic Doctrine	3	(3, 0, 3)
ARAB	101	Arabic Language Skills	2	(2, 0, 2)
ARAB	102	Arabic Language Writing	2	(2, 0, 2)
PE	101	Physical Education 1	1	(0, 2, 1)
PE	102	Physical Education 2	1	(0, 2, 1)
SKILL	110	Learning Skills	1	(0, 2, 1)
SKILL	120	Critical Thinking & Problem-solving	2	(2, 0, 2)
SKILL	121	Leadership & Teamwork	2	(2, 0, 2)
MATH	100	Elementary Mathematics	4	(2, 4, 4)
ENGL	111	Oral Communication I	3	(0, 6, 3)
ENGL	112	Grammar	2	(0, 4, 2)
ENGL	113	Reading & Writing I	3	(0, 6, 3)
ENGL	121	Oral Communication II	3	(0, 6, 3)
ENGL	122	IELTS Exam Preparation	2	(0, 4, 2)
ENGL	123	Reading & Writing II	3	(0, 6, 3)
Total credits			**35**	
Percentage of program credits			**21%**	

Table 15. College Requirement Courses:

Course Code		Title	Credits	(LT, LB, CR)
MATH	101	Mathematics I	4	(2, 4, 4)
DES	101	Design Foundation I	3	(0, 6, 3)
DES	102	Descriptive Drawing I	2	(0, 4, 2)
DES	105	Freehand Drawing	1	(0, 2, 1)
DES	106	Color Theory	2	(1, 2, 2)
DES	110	Design Foundation II	3	(0, 6, 3)
DES	120	Descriptive Drawing II	3	(0, 6, 3)
DES	103	Digital Photography & Image Processing	3	(1, 4, 3)
Total credits			**21**	
Percentage of program credits			**13%**	

Table 16. Core Requirements (Compulsory Courses)

Course Code		Title	Credits	(LT, LB, CR)
PHY	101	General Physics	3	(2, 2, 3)
ARCH	201	Introduction to Architecture	2	(1, 2, 2)
ARCH	202	History of Architecture I	2	(2, 0, 2)
ARCH	211	Architecture Design I	4	(0, 8, 4)
ARCH	212	Theory of Architecture I	2	(2, 0, 2)
ARCH	213	Architectural Computing	3	(1, 4, 3)
ARCH	214	Building Construction I	3	(2, 2, 3)
ARCH	215	Construction Materials	3	(2, 2, 3)
ARCH	216	Statics	3	(2, 2, 3)
ARCH	301	Intermediate Design Studio I	4	(0, 8, 4)
ARCH	302	History of Architecture II	2	(2, 0, 2)
ARCH	303	Environmental Control	2	(2, 0, 2)
ARCH	304	Building Construction II	3	(2, 2, 3)

ARCH	305	Landscape and Site Planning	2	(1, 2, 2)
ARCH	306	Structural Analysis I	3	(2, 2, 3)
ARCH	311	Intermediate Design Studio II	4	(0, 8, 4)
ARCH	312	Theory of Architecture II	2	(2, 0, 2)
ARCH	313	3D Modeling & Rendring	3	(1, 4, 3)
ARCH	314	Concrete and Steel Construction	3	(2, 2, 3)
ARCH	315	Principles of Urban Planning	2	(2, 0, 2)
ARCH	316	Architecture of Arabian Region	2	(2, 0, 2)
ARCH	401	Comprehensive Design Studio I	4	(0, 8, 4)
ARCH	402	Sanitary & Technical Installations	3	(2, 2, 3)
ARCH	403	Lighting and Acoustics	3	(2, 2, 3)
ARCH	404	Construction Documents I	3	(1, 4, 3)
ARCH	411	Comprehensive Design Studio II	4	(0, 8, 4)
ARCH	412	Humanities in Architecture	2	(2, 0, 2)
ARCH	413	Community Housing Design	2	(2, 0, 2)
ARCH	414	Construction Documents II	3	(1, 4, 3)
ARCH	415	Soil Mechanics and Foundations	3	(2, 2, 3)
ARCH	501	Advanced Design Studio	5	(0, 10, 5)
ARCH	502	Graduation Project Research	3	(2, 2, 3)
ARCH	503	Project Management	2	(2, 0, 2)
ARCH	511	Graduation Project	6	(0, 12, 6)
ARCH	512	Professional Practice	2	(2, 0, 2)
Total Credits			**102**	
Percentage of Program Credits			**61%**	

Table 17. Core Requirements (Elective Courses)

Field	Elective courses of ARCH Program	CR	(LT, LB, CR)
Digital Media	Special Topics in Computer Aided Design	2	(2, 0, 2)
	Advanced 3D Modeling and Animation	2	(2, 0, 2)
	Building 3D Virtual Environment	2	(2, 0, 2)
	Advanced Graphic Communications	2	(2, 0, 2)
	Geographic Information System	2	(2, 0, 2)
	Advanced Parametric Design	2	(2, 0, 2)
Theoretical fields of Design	History & Theory of Architecture V	2	(2, 0, 2)
	Architectural Preservation	2	(2, 0, 2)
	Islamic Architecture	2	(2, 0, 2)
	Advanced Urban Design	2	(2, 0, 2)
	Traditional Architecture in The Gulf Countries	2	(2, 0, 2)
Environmental Control	Thermal Environmental Systems	2	(2, 0, 2)
	Renewable Energy Systems	2	(2, 0, 2)
	Environmental Impact Assessment	2	(2, 0, 2)
Total Credits Required		**8**	
Percentage of Program Credits		**5%**	

PART II

Course Description

DES 101 – Design Foundation I

Course ID & Title	DES 101 – Design Foundation I
Total credits awarded	3 Cr Hrs – 6 Contact Hrs
Course Description (limit 25 words):	This course addresses the study of the basic elements and principles of design. It applies an exploration of problem solving and design elements and principles in 2-dimensional compositions.
Course Goals & Objectives (list):	• To adopt a creative approach to problem solving and apply the elements and principles of design to a given problems. • To Increase the ability of cognitive skills by providing seminars about elements & principles of design through internet & others. • To design and draw details of solving designable problems. • To increase the ability of communication and information technology. • Be able to use media of 2D drawings to explain their intentions. • To develop the ability to organize the time and effort. • Increase psychomotor skills through using their hands & figures.
Student Performance Criterion/ addressed (list number and title):	(2) Critical Thinking (ability) (3) Graphic Skills (ability) (5) Formal Ordering Systems (understanding) (6) Fundamental Design Skills (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Presentation, Pre-conceptions, Blindfold sensory (5%). • Line vs. Mark-making (10%). • Wire drawings (10%). • Nature Squares (10%). • Shape and Form (10%). • Perceptual Structure & Figure/Ground Motif Collage (10%). • Rhythm/Movement (10%). • Visual Organization Balance (10%). • Color as Light (10%).
Prerequisites:	None
Textbooks/Learning Resources:	Textbook: Universal Principles of Design: 125 Ways to Enhance Usability, Influence, William Lidwell, Kritina Holden,Jill Butle, 2010. Textbook: How Designers Think: The Design Process Demystified Bryan Lawson 2006.
Offered (semester and year):	Second semester / First year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Dr. Sultan Alotaibi , Mr. Mohammed Alqahtani, Dr. Inas Rashed, Ms. Sadim Nizar Alissa.

DES 102 – Descriptive Drawing I

Course ID & Title	DES 102 – Descriptive Drawing I
Total credits awarded	2 Cr Hrs – 4 Contact Hrs`
Course Description (limit 25 words):	The course introduces students to the fundamental principles of analytical drawing and presenting design concepts. It introduces students to manual drafting processes including freehand drawing, single-view drawing and pictorial drawing.
Course Goals & Objectives (list):	• Acquire necessary representational and analytical skills including graphic thinking techniques. • Recognize the process of design composition of primary elements using freehand and manual drawings. • Produce, to a minimum established standard, design drawings that presents specific design concepts. • See and represent basic geometrical forms, positive and negative space, and mass.
Student Performance Criterion/ addressed (list number and title):	(3) Graphic Skills (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Drafting Geometry and Single-View Drawing. • Orthographic Projection. • Midterm (20%). • Auxiliary Views. • Sectional Views. • Pictorial Drawing (isometric). • Lettering; Symbols. • Daily assignments (40%). • Final Exam (40%).
Prerequisites:	None
Textbooks/Learning Resources:	Textbook: Spencer & Dygdon, 1994. Basic Technical Drawing. Second edition. Prentice-Hall.
Offered (semester and year):	Second semester / First year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Dr. Ahmad Toman , Ms. Samia Ayyoub, Ms. Hind Albul Moneim

DES 103 – Digital Photography and Image Processing

Course ID & Title	DES 103 – Digital Photography and Image Processing .
Total credits awarded	3 Cr Hrs – 5 Contact Hrs
Course Description (limit 25 words):	Learn fundamental principles of digital-imaging using the most updated image-processing software. Topics include; production, manipulation and output of digital-images, also aesthetics of photographic image manipulation.
Course Goals & Objectives (list):	• Acquire basic photographic principles and concepts Recognizing basic photographic peculiarities. Also be able to make digital photographs that are well crafted and neat. • Acquire the basic principles of resolution and output of digital imaging and to realize the production of digital imaging • Introduction to the basics of image processing using Adobe Photoshop demonstrating the skill of manipulating digital imaging. • To demonstrate the skills necessary for the production of photographic imaging from digitized or analogue images. • Grasp the basic principles of aesthetic manipulation of digital images. • Design skills, design process, personal expression, content development, project management, and trends in visual communication as they relate to digital imaging will be emphasized along with the learning of tools and techniques.
Student Performance Criterion/ addressed (list number and title):	(3) Graphic Skills (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• History and Introduction of photography (10%) • Introduction to Digital Imaging (10%) • Working with Layers, Working with Type tool (20%) • Transforming & Retouching (10%) • Use computerized layering techniques to apply special effects(10%) • Color, Tonal Adjustments and Sharpening Images (20%) • Understanding filters (10%) • Understanding of the concept of resolution (10%)
Prerequisites:	ENGL 111
Textbooks/Learning Resources:	Textbook: London, Barbara – Upton, John – Stone, Jim – Kobre, Kenneth – Brill, Betsy. Photography: Eighth Edition. ISBN:0-13-189609-1 Textbook: The Adobe PhotoshopCS5 Book for Digital Photographers.
Offered (semester and year):	Second semester / First year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Mr. Jabran Zaffar. Ms. Duha Engawi

PHY 101 – General Physics

Course ID & Title	PHY 101 – General Physics
Total credits awarded	3 Cr Hrs – 2 Contact Hrs
Course Description (limit 25 words):	This course provides a thorough introduction to the principles and methods of physics. Emphasis is placed on problem solving and quantitative reasoning. This course covers Newtonian mechanics, special relativity, gravitation, friction, deformations, hydrostatics, an introduction to electrical potential energy and magnetic field, thermodynamics, and waves.
Course Goals & Objectives (list):	• The student will be able to solve physical problems related to his major . • The student can analyze the forces and moments applied on the structures. • The student will have ability to understand the behavior of the structure due to waves which come from earthquake.
Student Performance Criterion/ addressed (list number and title):	(2) Critical Thinking (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Newtonian mechanics (30%). • Special relativity (10%). • Gravitation , Friction and Deformations (20%) . • Hydrostatics (10%). • Electrical potential energy and magnetic field (10%). • Thermodynamics and waves (20%).
Prerequisites:	Second semester / First year
Textbooks/Learning Resources:	Textbook: Physics , Poul E .Tippens seven Edition Mcgraw -HILL 2007. Textbook: Materials science and Engineering An introduction, William D. Callister , Jr. Third edition 2006 . Textbook: Physics Q .Rowell and S.Hrbert, Cambridge low price Edition 498589 1995 .
Offered (semester and year):	First semester / Third year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Prof. Mamoun Hammosh, Dr. Diala Tabbal

MATH 101 – Mathematics I

Course ID & Title	MATH 101 – Mathematics I
Total credits awarded	3 Cr Hrs – 2 Contact Hrs
Course Description (limit 25 words):	Limits and continuity of functions of a single variable. Derivatives of Polynomials and Exponential Functions. The Product and Quotient Rules. The Chain Rule. Implicit differentiation. Derivatives of Logarithmic Functions. Related Rates. Linear Approximations and Differentials. Maximum and Minimum of functions. First and second derivative tests for local extrema. Inflection points. Curve sketching. Indeterminate Forms and L'Hospital's Rule Applied extrema problems. The Mean Value Theorem and applications
Course Goals & Objectives (list):	• The student will be able to solve mathematical problems related to engineering concepts. • The student can draw the right curves and determine the maximum and minimum values.
Student Performance Criterion/ addressed (list number and title):	(2) Critical Thinking (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Limits and continuity of functions (20%) . • Derivatives of Polynomials and Exponential Functions , Product and Quotient Rules , Chain Rule , and Implicit differentiation (20%). • Derivatives of Logarithmic Functions and Linear Approximations and Differentials (10%). • Maximum and Minimum of functions and local extreme values and curve sketching (20%). • L'Hospital's Rule (10%). • The Mean Value Theorem and applications (20%) .
Prerequisites:	MATH100
Textbooks/Learning Resources:	Textbook: Fundamentals of Engineering Mathematics / H.K. Dass / S,Chand & Company Ltd / 2008. Textbook: Introduction to Engineering Mathematics / Croft, Davison and Hargreaves, (Addison-Wesley).
Offered (semester and year):	Second semester / First year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Prof. Mamoun Hammosh, Dr. Diala Tabbal

DES 111 – Design Foundation 2

Course ID & Title	DES 111 : Design Foundation 2
Total credits awarded	3 Cr Hrs – 6 Contact Hrs`
Course Description (limit 25 words):	This course will introduce basic three-dimensional processes and materials as well as develop the students' ability to analyze form and space relationships.
Course Goals & Objectives (list):	• To provide students with knowledge of the technical processes and vocabulary associated with three-dimensional forms. • To reveal and cultivate students' powers of imagination, creativity and ability to conceptualize in three dimensions. • Students will be able to create three-dimensional forms and utilize support drawings, plans, and maquettes. • Students will learn utilize visual elements and design principles in manipulating. • To develop students' ability to analyze three-dimensional works.
Student Performance Criterion/ addressed (list number and title):	(2) Critical Thinking (ability) (3) Graphic Skills (ability) (5) Formal Ordering Systems (understanding) (6) Fundamental Design Skills (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Proj. 1: Converting a 2D collage to 3D construction.(2,5%) • Proj. 2:Paper pop-ups.(5%) • Proj. 3: Photomontage, rolled paper.(2,5%) • Proj. 4: Story-line-Maquette of a shop (5%) • Proj. 5 : Subtractive sculpture, texture and shadow - Plaster carving.(5%). • Proj. 6 and 7(Midterm projects) :implant a concept, Assemblage containing the concept of "you "and "the other".(20%) • Proj. 8 : Balance and harmony, motion and time.(5%) • Proj. 9 : Thinking in New Forms- Inflatable Sculpture .(5%) • Proj. 10: Myth making/creating the absurd. (5%) • Proj. 11: Develop ideas and thumbnails for large scale-the wall.(5%) • Proj. 12 : Final project, Installation based on a story.(40%)
Prerequisites:	DES 101 – Design Foundation I
Textbooks/Learning Resources:	Textbook: Stewart, Mary. Launching the imagination: A Comprehensive Guide to Basic Design. (Second Edition) Magraw Hill, NY, NY. 2007. ISBN 0-07-230355-7Publications inc., Mineola, New York, 1999.
Offered (semester and year):	First semester / Second year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Dr. Ayman Almusharaf, Mr. Saad Alotaibi, Dr. Dina Nafadi, Ms. Samar Ziadeh,

DES112 - Descriptive Drawing II

Course ID & Title	DES112 : Descriptive Drawing II
Total credits awarded	3 Cr Hrs – 6 Contact Hrs`
Course Description (limit 25 words):	This course introduces students to the principles of perspective drawing, shade and shadow. Students learn to draw in detail different shapes from one-point and two-point perspective, using mainly pencil.
Course Goals & Objectives (list):	• The students understand the principles and methods of drawing perspective with one-vanishing point or two-vanishing points. • Be aware to the methods and rules of presenting shades & shadow for different types of forms. • Raising the capacity to assess things objectively by learning how to judge the creative work in arts.
Student Performance Criterion/ addressed (list number and title):	(3) Graphic Skills (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Realizing Perspectives basics (image plane, cone of vision, angle of vision, vanishing points) Dimensional coordination and application to building elements and components. • Studying of shadows of spatial elements (points, lines, plans and forms) • Study the shades and shadows for perspective learn how to draw one-point perspective and internal perspective using mainly pencil and ink media. • Learn how to draw two-point perspective and external perspective using mainly pencil and ink media. • Recognize how to present shade and shadow in the perspective. • Integrate the effects of light, shade, and shadow.
Prerequisites:	DES 102 – Descriptive Drawing I
Textbooks/Learning Resources:	Textbook: Ernest R. Norling, *Perspective made easy*, Dover Publications inc., Mineola, New York, 1999.
Offered (semester and year):	First semester / Second year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Dr. Mustafa Ramadan , Ms. Hind Abdulminum , Ms. Bareera Iqbal.

ARC 201 – History of Architecture I

Course ID & Title	ARC 201 – History of Architecture I
Total credits awarded	3 Cr Hrs – 4 Contact Hrs
Course Description (limit 25 words):	This course introduces the chronological development of Middle Eastern, Greek, Roman and Byzantine eras. Each era emphasizes the spatial organization in relation to physical characteristics.
Course Goals & Objectives (list):	• Study the historical types of buildings in chronology. • Specify the construction methods and materials of historical buildings. • Define the historical building elements and architectural styles. • Identify the relationship between public and building spaces in history. • Determine the scale and proportions of historical building development.
Student Performance Criterion/ addressed (list number and title):	(9) Historical Traditions (understanding) (10) Use of Precedents (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Ancient history of the Middle East (25%) • Greek civilization (25%) • Roman civilization (25%) • Byzantine civilization (25%)
Prerequisites:	DES101-Design Foundation I
Textbooks/Learning Resources:	Textbook: Fletcher B. (1996) A History of Architecture, 20th Edition, The Architectural Press.
Offered (semester and year):	First semester / Second year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Mr. Majid El-abd , Ms. Hind Abdul Rahman.

ARC 202 - Building Construction I

Course ID & Title	ARC 202 - Building Construction I
Total credits awarded	3 Cr Hrs – 4 Contact Hrs
Course Description (limit 25 words):	The aims of this course are to study, theoretically and practically, the principles of building construction and the uses of different building materials.
Course Goals & Objectives (list):	• To study theoretically and practically the principles of building construction and the uses of different building materials. • To understand main architectural topics such as: structure systems, types of foundations, masonry construction, and the use of different building materials such as brick, stone. • Develop skills in studying of complete engineering working Drawings. • Acquire skills in setting dimensions and details on the engineering working drawings. • Recognizing steps of preparing the implementation engineering drawings.
Student Performance Criterion/ addressed (list number and title):	(3) Graphic Skills (ability) (4) Research Skills (ability) (17) Structural Systems (understanding) (23) Building Materials and Assemblies (understanding)
Topical Outline (including percentage of time in course spent in each subject area):	• Introduction (1 week) • Introduction for Steps of preparing the implementation engineering working drawings. (1 week) • First step of working drawings (Drawing planes)(2 week) • Second step of working drawings (Drawing sections). (1 week) • Third step of working drawings(Drawing elevations). (1 week) • Fourth step of working drawings (Drawing lay-outs & site plans). (1 week) • Types of building materials (brick & brick bonding). (2 week) • Types of construction method (Wall Bearing Construction). (1 week) • Skeleton Construction. (1 week) • Box frame Construction – shell Construction. (1 week) • Types of Foundations. (1 week) • Types of wall's elements. (1 week) • Drawing complete working drawing project. (1 week)
Prerequisites:	ENGL112,ENGL111,ENGL113
Textbooks/Learning Resources:	Textbook: Koenigsberger, O., 2005, Manual of Tropical Housing and Building Design with Climate, Longman Group, ltd, London, UK
Offered (semester and year):	First semester / Second year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Dr. Mustafa Mohammad Ramadan, Ms. Dima Khalid Afisa.

ARC 216 –Statics

Course ID & Title	ARC 216 – Statics
Total credits awarded	3 Cr Hrs – 4 Contact Hrs`
Course Description (limit 25 words):	The course covers the application of the fundamental principles of Newtonian mechanics to the statics of particles and the equilibrium of trusses, frames, beams and other rigid bodies. Forces; moments; trusses; beams; free body diagrams; friction; equilibrium; first and second moments of lines, areas, and volumes; centers of pressure, mass, and gravity; and moments of inertia.
Course Goals & Objectives (list):	• Define magnitude and direction of forces and moments and identify associated scalar and vector products. • Solve problems using the equations of static equilibrium. • Compute the moment of force about a specified point or line. • Replace a system of forces by an equivalent simplified system. • Analyze the forces and couples acting on a variety of objects • Determine unknown forces and couples acting on objects in equilibrium. • Analyze simple trusses using the method of joints or the method of sections.
Student Performance Criterion/ addressed (list number and title):	(17) Structural Systems (understanding)
Topical Outline (including percentage of time in course spent in each subject area):	• Chapter 1: Introduction. • Chapter 2: Statics of Particles. • Chapter 3: Equivalent Systems of Forces. • Chapter 4: Equilibrium of Rigid Bodies. • Chapter 5: Centroids and Center of Gravity. • Chapter 6: Analysis of Structures. • Chapter 7: Forces in Beams and Cables. • Chapter 8: Friction. • Chapter 9: Distributed forces: Moment of Inertia
Prerequisites:	PHY 101, MATH 101 and DES 111
Textbooks/Learning Resources:	Textbook: F.P. Beer, E.R. Johnston, D.F. Mazurek, & E.R. Eisenberg, 2009. Mechanics for Engineers: Statics, McGraw-Hill, 9th Edition.
Offered (semester and year):	First semester / Second year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Prof. Maad Aldelamy , Dr. Diala Tabbal.

ARC 211 – Architectural Design I

Course ID & Title	ARCH 211 – Architectural Design I
Total credits awarded	4 Cr Hrs – 8 Contact Hrs`
Course Description (limit 25 words):	Exercises of elementary units perform 'game-theory' approach of spatial organization and axial development. Villa-type residential project explores the design process in physical and social contexts.
Course Goals & Objectives (list):	• Ability to use appropriate representational media, including freehand drawing and computer technology, to convey essential formal elements at each stage of the programming and design process. • Understanding of the fundamentals of visual perception and the principles and systems of order that inform two- and three-dimensional design, architectural composition, and urban design • Ability to use basic architectural principles in the design of buildings, interior spaces, and sites - • Ability to incorporate relevant precedents into architecture and urban design projects.
Student Performance Criterion/ addressed (list number and title):	(3) Graphic Skills (ability) (5) Formal Ordering Systems (understanding) (6) Fundamental Design Skills (ability) (10) Use of Precedents (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Graphics Skills, (50%) • Formal ordering system (20%) • Fundamental design Skills (20%) • Use of Precedence (10%)
Prerequisites:	DES 111 - Design Foundation II
Textbooks/Learning Resources:	Textbook: Ching, Francis K., 1995. Architecture, Form, Space & Order, Oxford, John Wiley & Sons, 2 edition. Textbook: Neufert, Ernst, (1970) 2012. Neufert Architect's Data, Oxford, John Wiley & Sons, 4th Edition
Offered (semester and year):	Second semester / Second year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Dr. Mustafa Ramadan, Ms. Samia Ayyoub

ARC 212 – Graphic Communication

Course ID & Title	ARC 212 – Graphic Communication.
Total credits awarded	3 Cr Hrs – 5 Contact Hrs
Course Description (limit 25 words):	Introduction to fundamentals of 2D-Drafting. Students will utilize CAD to make drawings from scratch, edit existing CAD-models, blocks and print-out quality drawings in any discipline.
Course Goals & Objectives (list):	• Introduce basic computer drafting skills • Identify and describe the major functions of CAD platform. • Effectively communicate 2D compositions and products using CAD software. • Use design modeling to create orthographic drawings: plans, elevations sections. • Create hard copy and soft copy technical drawings. • Learn to utilize digital media as drafting systems to become more productive. • Demonstrate proficiency with the latest CADD software.
Student Performance Criterion/ addressed (list number and title):	(3) Graphic Skills (ability) (5) Formal Ordering Systems (understanding)
Topical Outline (including percentage of time in course spent in each subject area):	• Introduction to digital drafting + space orientation (10%) • Basic Commands and modifications to get started (10%) • Gaining Drawing Strategies (10%) • Using Layers to Organize your Drawing (10%) • Dimensioning a Drawing and using leaders (10%) • Grouping objects into blocks (10%) • Create hatching (10%) • Controlling text in a drawing (10%) • Generating Elevations (10%) • Using a layout for printing setup (10%)
Prerequisites:	DES 103
Textbooks/Learning Resources:	Textbook: Finkelstein, Ellen. (AutoCAD 2010 and AutoCAD LT 2010 Bible). USA Indianapolis. ISBN: 978-0-470-463640-0. Textbook: Byrnes, David. (AutoCAD 2011 for Dummies). USA, Hoboken.
Offered (semester and year):	Second semester / Second year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Mr. Jabran Zaffar, Ms. Bareera Iqbal.

ARC 213 – History of Architecture II

Course ID & Title	ARC 213 – History of Architecture II
Total credits awarded	3 Cr Hrs – 4 Contact Hrs
Course Description (limit 25 words):	This course of History of Architecture II focuses on the middle ages architecture, starting with the early Christian architecture. It covers the Romanesque Architecture, the Gothic Architecture, and Renaissance architecture, Baroque Architecture with reference to German, French and Italian styles.
Course Goals & Objectives (list):	• To learn about History of Architecture in Middle Ages starting with Early Christian architecture, Romanesque Architecture, The Gothic Architecture, Renaissance Architecture, Baroque architecture, Byzantine Architecture. • To increase the ability of cognitive skills by providing seminars about famous Renaissance or Baroque Architecture. Search about specific topic through internet, how to write reports. • To increase the ability of interpersonal Skills and Responsibility , after each lecture the students will asked to provide report about the topic, and discuss this reports together and uploade in LMS in a time. • To analysis by using the main comparative points. To recognize the design element and buildings characteristics. • To draw sketches by pencils after each lecture, that students will use their hands and figures.
Student Performance Criterion/ addressed (list number and title):	(9) Historical Traditions (understanding) (10) Use of Precedents (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Introduction to the course 10% • The Early Christian Architecture, 10% • The Romanesque Architecture 30%. • The Gothic Architecture in Europe 30% • Renaissance Architecture in Rome 10% • Baroque Architecture.10%
Prerequisites:	ARC 201 History of Architecture I
Textbooks/Learning Resources:	Textbook: FLETCHER, B., 1905.History of architecture on comparative method, University of Toronto L, UK.
Offered (semester and year):	Second semester / Second year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Dr. Ahmad Toman, Mr. Majid El-abd, Ms. Hind Abdel Moneim.

ARC 301– Intermediate Design Studio I

Course ID & Title	ARC 301 – Intermediate Design Studio I
Total credits awarded	4 Cr Hrs – 8 Contact Hrs`
Course Description (limit 25 words):	This course teaches students to work with different uses and circulation of medium scale public buildings, considering the size and quality of each space and the relationship between them and between indoor-outdoor environment.
Course Goals & Objectives (list):	• Improve students skills in creating physical models. • Use the principles of design to support communicative issues such as concept, content and subject matter. • Understand elements and principles of architectural design for outpatient clinics. • Acquire necessary representational and analytical skills including graphic thinking techniques.
Student Performance Criterion/ addressed (list number and title):	(3) Graphic Skills (ability) (6) Fundamental Design Skills (ability) (10) Use of Precedents (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Introduction, course objectives 5% • Case study analysis and model making 20% • Site Analysis 10% • Concept Approach and Development 10% • Preliminary design 10% • Structural analysis 5% • Design development 20% • Final development and presentation 20%
Prerequisites:	ARCH 211- Architecture Design I
Textbooks/Learning Resources:	Textbook: Ching, Francis K., 1995. Architecture, Form, Space & Order, Oxford, John Wiley & Sons, 2 edition. Textbook: Wucius, Wong, 1993. Principles of Form and Design, Wiley, 1st Edition. Textbook: Neufert, Ernst, (1970) 2012. Neufert Architect's Data, Oxford, John Wiley & Sons, 4th Edition
Offered (semester and year):	First semester / Third year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Mr. Mohammed Alqahtani, Mr. Saad Al-Otaibi, Ms. Hana' Da'san.

ARC 302 – Theory of Architecture I

Course ID & Title	ARC 302 – Theory of Architecture I
Total credits awarded	3Cr Hrs – 3 Contact Hrs
Course Description (limit 25 words):	This course considers the architectural theories from the industrial revolution until World War II. This course is linked to a series of lectures titled “Riyadh Talks”.
Course Goals & Objectives (list):	• Understand the definition and importance of architectural theory. • Develop an awareness of the evolution of architectural theory across the centuries. • Teach skills in visual and formal analysis of architecture. • Increase written and visual communication skills.
Student Performance Criterion/ addressed (list number and title):	(9) Historical Traditions (understanding) (10) Use of Precedents (ability) (11) Human Behavior (understanding)
Topical Outline (including percentage of time in course spent in each subject area):	• Introduction, course objectives 5% • What is theory of architecture, and why architects and thinkers produced books about theory of architecture 75% • How theory affects architecture 20%
Prerequisites:	ARC 201, ARC 202
Textbooks/Learning Resources:	Textbook: Cohen, J.-L. (2012). The Future of Architecture Since 1889. London: Phaidon Press. Textbook: Curtis, W. J. (1996). Modern Architecture Since 1900. London: Phaidon Press. Textbook: Fazio, M., Moffett, M., & Wodehouse, L. (2008). A World History of Architecture (2nd Revised ed.). McGraw-Hill Professional.
Offered (semester and year):	First semester / Third year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Ms. Hana’ Da’san, Mr. Francisco Casas Cobo.

ARC 303 –Building Construction II

Course ID & Title	ARC 303 –Building Construction II
Total credits awarded	3 Cr Hrs – 4 Contact Hrs
Course Description (limit 25 words):	This course introduces the non-structural systems of buildings, the principles of their design, types, performance, construction and installation. It explains construction technology through key functional and performance requirements for those elements common to all buildings.
Course Goals & Objectives (list):	• Describe the elements of the building, their assemblage, and their functions. • Distinguish the appropriate finishing materials for each building element. • Draw engineering working drawings and present it in professional way with complete details • Identify important considerations when implementing, reviewing and receiving the work finishes.
Student Performance Criterion/ addressed (list number and title):	(3) Graphic Skills (ability) (20) Building Envelope Systems (understanding) (23) Building Materials and Assemblies (understanding) (25) Technical Documentation (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Finishes (interior & exterior walls, floors and ceiling). 50% • Opening System. 20% • Stairs & elevators. 20% • Insulation & protection system. 10%
Prerequisites:	ARC 202 – Building Construction I
Textbooks/Learning Resources:	Textbook: Ching, Francis D.K., & Mulville, Mark, European Building Construction Illustrated, 4th edition, Wiley & Sons, N.J., 2014. Textbook: Allen, E., 1985, Fundamentals of Building Construction, John Wiley, New York.
Offered (semester and year):	First semester / Third year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Dr. Mustafa Ramadan, Ms. Juwayria M. Osman, Mr. Majid El-abd

ARC 304 – Landscape and Site Planning

Course ID & Title	ARC 304 – Landscape and Site Planning
Total credits awarded	3 Cr Hrs – 4 Contact Hrs
Course Description (limit 25 words):	This course addresses the main principles of landscape design and its relation to the natural and built-environment.
Course Goals & Objectives (list):	• To provide students with the essential practical backgrounds and the basic design principles that can help them in developing their landscape design sketches. • To describing the use of materials, construction methods and technology in various traditions of landscape design
Student Performance Criterion/ addressed (list number and title):	(13) accessibility (ability) (16) Site Conditions (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Introduction, course objectives, history of landscape 15% • Types of gardens 10% • Landform , expression of land, Hard and soft landscape 25% • Design process in landscape 40% • Architectural details of landscape architecture 10%
Prerequisites:	ARCH 211 - Architecture Design I.
Textbooks/Learning Resources:	Textbook: Mahadin, Kamel. Landscape plants for Jordan and the Middle East, Amman, M.K. Associates, 2006 Textbook: Motloch, John. Introduction to Landscape Design. New York: Van Nostrand Reinhold, 1991. Textbook: Turner, James & Odenwald, Neil. Identification, Selection and Use of Southern Plants: For Landscape Design. Claitor's Law Books and Publishing, Textbook: Harris, Charles & Dines, Nicholas, Time-Saver Standards for Landscape Architecture, McGraw-Hill Professional, 2nd Edition, 1997. Textbook: Smith, Ken, Landscape Architects Urban Projects: A Source Book in Landscape Architecture, Princeton Architectural Press; 1st Edition, 2005 Textbook: Swaffield, Simon (Editor), Theory in Landscape Architecture: A Reader, Philadelphia: University of Pennsylvania Press, 2002
Offered (semester and year):	First semester / Third year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Ms.Hana' Da'san, Ms. Samia Ayyoub, Dr. Ali El Shazly.

ARC 305 – Materials and Construction Systems

Course ID & Title	ARC 305 – Materials and Construction Systems
Total credits awarded	3 Cr Hrs – 4 Contact Hrs
Course Description (limit 25 words):	Construction Materials course is structured to give the student of architecture a conceptual, theoretical and technical base for the inventive, creative and responsible use of materials associated with the built environment. This course provides an introductory overview of the various materials used in construction. After receiving an introduction into fundamental principles of structural, physical and long-term performance, students learn about material and product manufacturing techniques. Common construction methods are introduced and some building details are explored. The course focuses on three building systems: Masonry, Concrete and Steel as they are the most prominent in the Middle East construction market.
Course Goals & Objectives (list):	• Identify different types and properties of materials used in construction. • Demonstrate the main tests used in defining the different properties of materials. • Define different structural systems used for slabs, buildings and roofs.
Student Performance Criterion/ addressed (list number and title):	(14) Sustainable Design (understanding) (17) Structural Systems (understanding) (19) Life Safety (understanding) (23) Building Materials and Assemblies (understanding)
Topical Outline (including percentage of time in course spent in each subject area):	• Types of materials used in construction 10% • Building systems – Masonry- Concrete- Steel 45% • Measure Resistance - R-value 10% • Structural systems for buildings 20% • Materials Safety 10% • Sustainable building materials 5%
Prerequisites:	MATH 101
Textbooks/Learning Resources:	Textbook: Mamlouk, Michael S. and Zaniewski, John P, 2011, Materials for Civil and Construction Engineers, Pearson, NJ, USA. Textbook: Allen, E., 1985, Fundamentals of Building Construction, John Wiley, New York, USA.
Offered (semester and year):	First semester / Third year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Prof. Maad Aldelamy, Dr. Diala Tabbal, Ms. Juwayria M. Osman.

ARC 306 – Structural Analysis

Course ID & Title	ARC 306 – Structural Analysis
Total credits awarded	3 Cr Hrs – 4 Contact Hrs`
Course Description (limit 25 words):	The course introduces structural design concept and process, analysis of statically determinate structures, analysis of indeterminate structures by flexibility method and stiffness method.
Course Goals & Objectives (list):	• To introduce design concept and process of structures. • To review analysis of statically determinate structures. • To understand the deformations of structures under loading. • To introduce flexibility method for analysis of statically indeterminate structures. • To introduce stiffness method for analysis of statically indeterminate structures. • To introduce influence lines for reactions and internal forces under moving load.
Student Performance Criterion/ addressed (list number and title):	(2) Critical Thinking (ability) (17) Structural Systems (understanding)
Topical Outline (including percentage of time in course spent in each subject area):	• Types of structures and its elements • Types and shapes of different loads on structures • Different types of supports and equilibrium equations • Structure classification; statically determinate and indeterminate structures • Stability and determinacy of structures. • Reaction computations • Internal forces in trusses. • Internal forces in beams and its relationships • Determination of internal forces in beams and its diagrams • Determination of internal forces in frames and its diagrams • Determination of internal forces in arches and its diagrams
Prerequisites:	ARC 216
Textbooks/Learning Resources:	Textbook: Garrison, Philip, Eng.; Basic structures for engineers and architects; Blackwell Publishing Inc., 350 Main Street, Malden Textbook: F.P. Beer, E.R. Johnston, D.F. Mazurek, and E.R. Eisenberg, Mechanics for Engineers: by 9th Edition, McGraw-Hill, 2009. ISBN-13: 978-0-07-246478-9
Offered (semester and year):	First semester / Third year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Prof. Maad Aldelamy, Ms. Dima Ahmed.

ARC 311 – Intermediate Design Studio II

Course ID & Title	ARC 311 – Intermediate Design Studio II
Total credits awarded	4 Cr Hrs – 8 Contact Hrs`
Course Description (limit 25 words):	This course introduces the design process as a problem-solving strategy for a relatively complicated program. The main goal is to train the student in conducting pre-design studies and analyses as a critical input to the design process.
Course Goals & Objectives (list):	• Design an environmentally friendly building. • Design for the approval and appreciation of "real people". • Apply practical and theoretical analysis and problem-solving skills. • Develop a strong and appropriate concept that clearly enhances the overall solution. • Recognize and demonstrate the full potential of the problem. • Recognize the functional relationships between the different spaces inside the building. • Approach a design problem from a contextual point of view.
Student Performance Criterion/ addressed (list number and title):	(3) Graphic Skills (ability) (5) Formal Ordering Systems (understanding) (6) Fundamental Design Skills (ability) (10) Use of Precedents (ability) (14) Sustainable Design (understanding) (16) Site Conditions (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Visual Survey & Data Collection. 5% • Case Study & Program Development. 5% • Conceptual Design. 15% • DEVELOPED DESIGN. 35% • FINAL DETAILED DESIGN. 40%
Prerequisites:	ARCH 301- Intermediate Design Studio I
Textbooks/Learning Resources:	Textbook: Ching, Francis D.K., 1979. Architecture: Form, Space and Order, New York: Van Nostrand Reinhold,. Textbook: Ching, Francis D.K., 1975. Building Construction Illustrated, New York: Van Nostrand Reinhold.
Offered (semester and year):	Second semester / Third year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Prof. Gamal Alkholy, Dr. Sultan Alotaibi Dr. Margarita Gonzalez, Ms. Juwayria Osman

ARC 312 – Architecture of the Arabian Region

Course ID & Title	ARC 312 – Architecture of the Arabian Region
Total credits awarded	3 Cr Hrs – 3 Contact Hrs
Course Description (limit 25 words):	The chronology of Arabian architecture compares the building typology in terms of physical and spatial characteristics for students to sustain in their designs with cultural values.
Course Goals & Objectives	• Determine the types of historical buildings in the Arabian region. • Compare the building elements of Arabian architecture by region & time. • Compare the construction systems and materials of Arabian architecture. • Specify the principles of spatial composition in Arabian architecture. • Sustain the architectural heritage values in contemporary designs.
Student Performance Criterion/ addressed (list number and title):	(8) National and Regional Traditions (understanding) (9) Historical Traditions (understanding) (10) Use of Precedents (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Early Caliphate period (5 %) • Umayyed Architecture (15 %) • Abasid Architecture (15 %) • Architecture of Andalusia (15 %) • Fatimid Architecture (10 %) • Ayyubid Architecture (5 %) • Mamluk Architecture (10 %) • Ottoman Architecture (10 %) • Timur Architecture (5 %) • Safawy Architecture (5 %) • Indian Islamic Architecture (5 %)
Prerequisites:	ARC 313 - History of Architecture II
Textbooks/Learning Resources:	Textbook: R. Hillenbrand (2004) *Islamic Architecture: Form, Function and Meaning*, Colombia University Press.
Offered (semester and year):	Second semester / Third year
Faculty assigned	Ms. Hind Othman, Ms. Samia Ayyoub, Dr. A. El Shazly.

ARC 313 – Theory of Architecture II

Course ID & Title	ARC 313 –Theory of Architecture II
Total credits awarded	3 Cr Hrs – 3 Contact Hrs`
Course Description (limit 25 words):	Comparing the design principles of architectural movements and pioneers since early modernism enables students to think critically and approach the problem solving in creative design based on theoretical knowledge.
Course Goals & Objectives	• Clarify the impact of modern industrial development on building design. • Gain knowledge of modern theories and the works of pioneer architects. • Develop skills of criticism based on reasoning of design principles. • Produce creative designs based on theoretical argument. • Express critical thinking in written, oral and sketch design.
Student Performance Criterion/ addressed (list number and title):	(9) Historical Traditions (understanding) (10) Use of Precedents (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Pre-Modern Introduction (5 %) • The 18th Century and the Mechanical Vision to the World (5 %) • The 19th Century and the Industrial Revolution (5 %) • Architectural Movements in the 19th Century (5 %) • Pioneer Architects of the 19th Century (5 %) • Modern Architecture of the Early 20th Century (5 %) • The Bau Haus School of Modern Arts (1919-1933) (5 %) • Pioneers of Modern Architecture (10 %) • CIAM & Modernism Development (1930s) (5 %) • Early Post-Modern Movements (5 %) • Late Post-Modern Movements (10 %) • The Masters of Post Modern Architecture (10 %) • High-Tech Architecture (5 %) • Deconstructivism (1980s) (10 %) • Contemporary Movements in Architecture (10 %)
Prerequisites:	ARC 302 - Theory of Architecture I
Textbooks/Learning Resources:	Textbook: Manfredo Tafuri & Francesco Dal Co (1986) *Modern Architecture I & II*, Electa/Rizzoli, Milano.
Offered (semester and year):	Second semester / Third year
Faculty assigned	Ms. Albertina Naranjo, Mr. Francisco Casas Cobo, Dr. Ali El Shazly

ARC 314 – Sanitary and Technical Installations

Course ID & Title	ARC 314 – Sanitary and Technical Installations
Total credits awarded	2 Cr Hrs – 3 Contact Hrs
Course Description (limit 25 words):	Building water supply, discharge and retreat determine the piping systems and fixtures with their unit codes. Basic terminologies, working techniques and calculations are introduced.
Course Goals & Objectives (list):	• Knowledge of hydraulic principles and basic terminologies • Supply cold & hot water systems in building. • Discharge gray and black water systems in Building. • Calculation of fixture-units in relation to piping diameters. • Discharge and reuse of rainwater. • Detail vertical and horizontal piping networks in buildings & sites. • Design of Septic Tanks. • Recycling of gray water.
Student Performance Criterion/ addressed (list number and title):	(21) Building Service Systems (understanding) (22) Building System Integration (ability) (23) Building Materials and Assemblies (understanding)
Topical Outline (including percentage of time in course spent in each subject area):	• Hydraulic phenomena and terminologies 10% • Network principles of water supply and discharge 10% • Horizontal piping systems and manholes10% • Vertical piping systems 10% • Calculation of fixture units and piping diameters 20% • Calculation of rainwater pipes and recycling 10% • System of central boilers 10% • Types of Septic Tank 10% • Gray water recycling 10%
Prerequisites:	ARCH 304
Textbooks/Learning Resources:	Textbook: R. Stein (1988) Mechanical and Electrical Equipment for Buildings, Mac Guinness, UK.
Offered (semester and year):	Second semester / Third year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Professor Gamal Elkholy, Dr. Diala Tabbal

ARC 315 – Concrete and Steel Construction

Course ID & Title	ARC 315 – Concrete and Steel Construction
Total credits awarded	3 Cr Hrs – 4 Contact Hrs
Course Description (limit 25 words):	Study of the performance characteristics of concrete and steel, as construction materials. The main emphasis of the course will be on construction applications. Provides general residential and commercial construction knowledge and an understanding of the construction process.
Course Goals & Objectives (list):	• Understand the fundamentals of building structures; • Recognize the materials and components of a typical residential house and use the correct terminology for these components; • Understand the various house styles and architectural features. • Demonstrate an understanding of the Building Code and building controls process; and • Describe the construction of high-rise commercial buildings.
Student Performance Criterion/ addressed (list number and title):	(17) Structural Systems (understanding) (23) Building Materials and Assemblies (understanding)
Topical Outline (including percentage of time in course spent in each subject area):	• Site cast Concrete • Pre-cast Concrete • Foundation Systems • Steel Construction • Light Steel • Floor and Roof Systems • Walls Systems • Moisture and Thermal Protection • Special Constructions • Interior and Exterior Finish Work
Prerequisites:	ARCH 215 and ARCH 301
Textbooks/Learning Resources:	Textbook: Edward Allen & Joseph Iano, 2008. Fundamentals of Building Construction Materials and Methods, Wiley, 5 edition
Offered (semester and year):	Second semester / Third year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Prof. Mamoun Hammosh Prof. Maad Aldelamy , Ms. Dima Afisa.

ARC 316 – Advanced 3D Modeling and Animation

Course ID & Title	ARC 316 – Advanced 3D Modeling and Animation
Total credits awarded	3 Cr Hrs – 5 Contact Hrs
Course Description (limit 25 words):	This course further introduces the student to the principles of Advance 3D modeling and Rendering. It consists of a series of exercises aimed at developing student 3d skills which are an integral part of architectural education and professional practice. It introduces students to the principles of 3d modeling/texturing and rendering techniques. Students learn to present and render architectural buildings and spaces using Mental-ray in 3D Max. The course emphasizes the development of an individual approach to representation, and a wide variety of assignments encourages the student to develop an understanding of a range of techniques.
Course Goals & Objectives (list):	• To enable students how to work in a production environment, understand the mechanics of advance 3D Modeling • Ability to create 3D models using a variety of techniques, work with materials to texture your models, understand how to light a scene, be able to create animations, stage a scene, understand cinematography and learn how to create output for use in post-production.
Student Performance Criterion/ addressed (list number and title):	(3) Graphic Skills (ability) (5) Formal Ordering System (understanding) (6) Fundamental Design Skills (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Introduction to Autodesk 3DS Max Design 2014 and 3D Modeling: 5 weeks (31.25%) • Material Techniques, Lighting, Use of Cameras & Views: 5 weeks (31.25%) • Rendering and Animation: 4 weeks (25%) • Student Assessment : 2 weeks (12.5)
Prerequisites:	ARC 212
Textbooks/Learning Resources:	Textbook: Mastering Autodesk 3ds Max Design 2014: By Mark Gerhard, Jeffrey Harper
Offered (semester and year):	First semester / Fourth year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Mr. Jabran Zaffar Mr. Mohanad Bawadkji Ms. Maryam Rana

ARC 401 – Comprehensive Design Studio I

Course ID & Title	ARC 401 – Comprehensive Design Studio I
Total credits awarded	4 Cr Hrs – 8 Contact Hrs`
Course Description (limit 25 words):	This course addresses concepts, processes and skills to urban and architectural design, and will focus on a medium scale project to be developed in a complex historical district.
Course Goals & Objectives (list):	• To implement an understanding selection of technical, theoretical, and historical, and urban skills already acquired during the previous courses. • To comprehend other ways to represent architecture. Be able to use other Medias than 2D drawings to explain students intentions. • To design and draw details to solve architectural problems. • To be able to design a structural solution for a complex space such as a museum. • The course will enhance the insertion of the project within an urban context. • To develop skills in externalizing their ideas, verbally and visually, for the purpose of self-critique as well as to communicate with/to others.
Student Performance Criterion/ addressed (list number and title):	(3) Graphic Skills (ability) (4) Research Skills (ability) (7) Collaborative Skills (ability) (8) National and Regional Traditions (understanding) (9) Historical Traditions (understanding) (10) Use of Precedents (ability) (16) Site Conditions (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Warm Up Project: modeling ideas (2 weeks): 5% • Case study Analysis and programming (1 week): 10% • Site Analysis (1 week): 5% • Collage / conceptual approach (1 week): 5% • Skylight or Skin model: 5% • Final Presentation: 20% • Weekly work : 35%
Prerequisites:	ARC 311 - Intermediate Design Studio II
Textbooks/Learning Resources:	Textbook: Ching, Francis D. K., 2008. Building Construction Illustrated, New Jersey: John Wiley & Sons. Textbook: Cuthbert, Alexander, 2011. Understanding Cities. Method in Urban Design, London: Routledge. Textbook: Schittich, Christian, 2010. Building Skins, Berlin: Detail Publishers.
Offered (semester and year):	First semester / Fourth year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Dr. Mustafa Ramadan , Mr. Majid El-abd, Dr. Maria Cardenas, Ms. Marta Jimenez .

ARC 402 – Construction Documents I

Course ID & Title	ARC 402 – Construction Documents I
Total credits awarded	3 Cr Hrs – 5 Contact Hrs`
Course Description (limit 25 words):	Working drawings overlay the building structure, sanitary, electrical and HVAC systems on architectural cross-sections. Portfolio of construction documents details the building works at various scales and specifications.
Course Goals & Objectives (list):	• Integrate the building systems with architectural design. • Detail the architectural dimensions, levels and finishing materials. • Detail the sub/super structure, roofing, staircases and axes. • Detail the technical networks of ducts, pipes and sleeves. • Specify the materials used for each building fabrication. • Prepare checklist of working drawing portfolio.
Student Performance Criterion/ addressed (list number and title):	(3) Graphic Skills (ability) (20) Building Envelope Systems (understanding) (23) Building Materials and Assemblies (understanding) (25) Technical Documentation (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Detailed architectural drawings 20%. • Detailed structural drawings 30%. • Detailed sanitary systems 20%. • HVAC installations 10%. • Electrical installations 10%. • Final portfolio 10%.
Prerequisites:	ARCH 314 – Concrete & Steel Construction
Textbooks/Learning Resources:	Textbook: Mitchell's Structure and Fabric by J. Forster (parts I & II) Textbook: MacKay's Building Construction (parts I-V)
Offered (semester and year):	First semester / Fourth year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Prof. Gamal Elkholy, Dr. Mostafa Ramadan, Ms. Albertina Naranjo, Ms. Juwayria Osman

ARC 403 – Housing and Urban Design

Course ID & Title	ARC 403 – Housing and Urban Design
Total credits awarded	3 Cr Hrs – 4 Contact Hrs
Course Description (limit 25 words):	This course consists of two parts; Housing, which provides an introduction to housing theory, and Urban Design, which provides an introduction to urban design terms in both physical and non-physical aspects.
Course Goals & Objectives (list):	• Introduce housing design process and site planning of housing projects; and the development of socio-economic housing approach within an urban design context • Advance students' understanding of how public policy and private markets affect housing, economic development, the local economy, and neighborhood institutions • Give students an opportunity to reflect on their personal sense of the "housing, community, and economic development" process and the various roles that planners play in implementing various elements of those processes. • Introduce urban design theory and neighborhood design principles.
Student Performance Criterion/ addressed (list number and title):	(10) Use of Precedents (ability) - (11) Human Behavior (understanding) - (12) Human Diversity (understanding) - (13) Accessibility (ability) - (16) Site Conditions (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Introduction, course objectives 5% • Housing types, Housing problems, Sustainable housing 45% • Neighborhood Design, Land use, Urban Design 50%
Prerequisites:	ARC 311
Textbooks/Learning Resources:	Textbook: Fauset, C. F. (1991). Housing Design: an international perspective. London: B. T. Bartsford. Textbook: Lang, J. (2005). Urban Design: A Typology of Procedures and Products - Illustrated with 50 Case Studies. Routledge.
Offered (semester and year):	First semester / Fourth year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Prof. Gamal Elkholy, Ms. Hanaa Dasan

ARC 404 – Environmental Control

Course ID & Title	ARC 404 – Environmental Control
Total credits awarded	2 Cr Hrs – 2 Contact Hrs
Course Description (limit 25 words):	This course adjusts the climatic conditions within the comfort zone of human performance in building design. The essence of this course design sunshade devices and passive systems of cool ventilation.
Course Goals & Objectives (list):	• Control the vertical and horizontal angles of sunshade design upon the sun-path diagram on hour basis. • Control the thermal load of building spaces through the K-value calculation of cross-sectional building materials. • Control the building ventilation through the design of openings on the micro-climate of building spaces and the urban macro-climate as well. • Control the comfort zone projection on the psychometric chart for various climatic conditions.
Student Performance Criterion/ addressed (list number and title):	(14) Sustainable Design (understanding) (16) Site Conditions (ability) (18) Environmental Systems (understanding) (20) Building Envelope Systems (understanding)
Topical Outline (including percentage of time in course spent in each subject area):	• Construct the sun-path diagram for the design of sunshades (20%) • Thermal load calculation of building envelope and internal loads (20%) • Passive cooling systems (20%) • Types and methods of designing natural building ventilation (10%) • Psychometric chart and the comfort zone projection (10%) • Orientation of building surfaces and masses. (10%) • Determine the building form according to climatic conditions (10%)
Prerequisites:	ARC 202 – Building Construction I
Textbooks/Learning Resources:	Textbook: Victor Olgyay (1992) Design with Climate: Bioclimatic Approach to the Architectural Regionalism, John Willy & Sons, 1992 Textbook: Alison C (2011)"Green Studio hand book Environmental Strategies for Schematic Design", AIA+Walter T. Rutledge Press.
Offered (semester and year):	First semester / Fourth year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Dr. Sultan Al-Otaibi, Mr. Majid El-abd Ms. Hind Othman, Ms. Juwayria Osman

ARC 406 – Lighting & Acoustics

Course ID & Title	ARC 406 – Lighting & Acoustics
Total credits awarded	3 Cr Hrs – 4 Contact Hrs
Course Description (limit 25 words):	This course examines the reverberation and resonance criteria of designing room acoustics. Artificial illumination introduces the design methods and load calculation in building electrical installations.
Course Goals & Objectives	• Examine the sound-path diagram of reverberation. • Examine the axial mode frequency of resonance. • Determine the type & intensity of illumination for room functions. • Electrical working drawings with total versus actual load calculation.
Student Performance Criterion/ addressed (list number and title):	(18) Environmental Systems (understanding) (21) Building Service Systems (understanding)
Topical Outline (including percentage of time in course spent in each subject area):	• The study of sound reverberation (15 %) • The study of sound resonance (15 %) • Methods of sound absorption (10 %) • Methods of sound isolation (10 %) • Electronic sound (10 %) • Types of illumination (10 %) • Distribution of illumination (10 %) • Electrical working drawings (10 %) • Calculation of electrical loads (10 %)
Prerequisites:	ARC 303 - Building Construction II
Textbooks/Learning Resources:	Textbooks: M. Egan (2007) *Architectural Acoustics,* J. Ross Publishing, USA. Walter T. *et al.* (2010) *Mechanical and Electrical Equipment for Buildings*, John Wiley & Sons.
Offered (semester and year):	First semester / Fourth year
Faculty assigned	Ms. Juwayria Osman, Dr. A. El Shazly

ARC 411 – Comprehensive Design Studio II

Course ID & Title	ARC 411 – Comprehensive Design Studio II
Total credits awarded	4 Cr Hrs – 8 Contact Hrs`
Course Description (limit 25 words):	Develop different prototype of housing following similar relationship between uses and circulation. Solve the horizontal and vertical accumulation of different housing prototypes attending the design of circulations, common spaces and facilities. Work with the urban scale attending the design of public space and landscape.
Course Goals & Objectives (list):	• To develop the ability to jump from abstract thought to the realization • To develop critical thinking and architectural analytical skill • Work with geometry as a design tool • Be able to express graphically an architectural project properly • Deepen the housing development understood as a unit both can be assembled both as horizontal or vertical. • Work in the different scales of the architecture: from the city to the house
Student Performance Criterion/ addressed (list number and title):	(4) Research Skills (ability) (7) Collaborative Skills (ability) (8) National and Regional Traditions (understanding) (12) Human Diversity (understanding) (13) Accessibility (ability) (16) Site Conditions (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Case studies (5 %) • Housing prototypes (10 %) • System configuration (15 %) • Architectural prototype and geometrical system (20 %) • Master plan (30 %)
Prerequisites:	ARC 401
Textbooks/Learning Resources:	• Moussavi, Farshid, The function of form. Actar. 2009 • Aga Khan Award for Architecture (AKAA). www.akdn.org • ArchDaily | Broadcasting Architecture Worldwide. www.archdaily.com
Offered (semester and year):	Second semester / Fourth year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Dr. Mustafa Ramadan, Mr. Hamad AL Lhaydan Dr. Maria Cardenas, Ms. Marta jimenez

ARC 412 – Construction Documents II

Course ID & Title	ARCH 414 – Construction Documents II
Total credits awarded	3 Cr Hrs – 5 Contact Hrs
Course Description (limit 25 words):	In this course the students learn how to read the different elements of each engineering set of construction document. They shall be able to produce a typical set of each engineering discipline fully drafted and coordinated.
Course Goals & Objectives (list):	• Recognize the composition and importance of construction documents (drawings, bills of quantities, specifications and contracts). • Create a complete set of construction documents for any architectural project. • Demonstrate a professional level in computer graphic representation. • Recognize the responsibility of the architect upon this document.
Student Performance Criterion/ addressed (list number and title):	(3) Graphic Skills (ability) (20) Building Envelope Systems (understanding) (21) Building Service Systems (understanding) (22) Building Systems Integration (ability) (23) Building Materials and Assemblies (understanding) (25) Technical Documentation (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Preparing the frames and the index. Setting basic plans, elevation and section.10% • Defining floor plans (Furniture, Dimensions, Areas, Finishes, Walls and Carpentry) .25% • Drawing details plans (Kitchen, Bathrooms and Carpentry). 25% • Drawing a constructive section cutting the façade. 30% • Drawing details plans (Window, Stairs). 15% • Bill of Quantity. 15%
Prerequisites:	ARCH 401, ARCH 404
Textbooks/Learning Resources:	Textbook: Styles, Keith & Bichard, Andrew, *Working Drawings Handbook*, 4th edition, Routledge, NY, 2004.
Offered (semester and year):	Second semester / Fourth year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Prof. Gamal Elkholy, Dr. Mostafa Ramadan Ms. Albertina Naranjo. Ms. Juwayria Osman

ARC 413 – Humanities in Architecture

Course ID & Title	ARC 413 – Humanities in Architecture
Total credits awarded	2 Cr Hrs – 2 Contact Hrs
Course Description (limit 25 words):	The course studies the relationship between behavioral sciences and the architectural design process. The essence of personal space defines the design principles of various buildings and open spaces.
Course Goals & Objectives	• Define the relationship between human space and building artifact. • Integrate the program of behavioral science in the design process. • Achieve the personal space in social interaction of space. • Facilitate wayfinding and territoriality of the built environment. • Adopt the design principles of humanities for various building functions and public spaces.
Student Performance Criterion/ addressed (list number and title):	(11) Human Behavior (12) Human Diversity
Topical Outline (including percentage of time in course spent in each subject area):	• Theoretical review of human space (10 %) • Human behavior and the designer (10 %) • Personal space of human interaction (15 %) • Human aspects of the built environment (15 %) • The spatial design principles of human functions: (50%) - Living - Working - Meeting - Shopping - Learning - Healthcare - Public spaces
Prerequisites:	ARC 313 - Theory of Architecture II
Textbooks/Learning Resources:	Textbooks: B. Hillier & J. Hanson (1984) *The social Logic of Space*, Cambridge University Press, UK. C. M. Deasy & T. E. Lasswell (1990) *Designing Places for people*, The Architectural Press, USA.
Offered (semester and year):	Second semester / Fourth year
Faculty assigned	Ms. Marta Jimenez, Dr. A. El Shazly

ARC 414 – Principles of Urban Planning

Course ID & Title	ARC 414 : Principle of urban planning
Total credits awarded	3 Cr Hrs – 4 Contact Hrs`
Course Description (limit 25 words):	This course is designed to introduce students to various types and processes of urban planning. It is designed to provide students with an introduction to the issues, concepts, and tools central to planning.
Course Goals & Objectives (list):	• Understand basic forms of urban planning. • Be familiar with processes of planning. • Be familiar with different specializations and professional roles in urban planning. • Be able to communicate about pertinent community planning issues and policies effectively
Student Performance Criterion/ addressed (list number and title):	(4) Research Skills (ability) (8) National and Regional Traditions (understanding) (9) Historical Traditions (understanding) (11) Human Behavior (understanding) (12) Human Diversity (understanding) (13) Accessibility (ability) (16) Site Conditions (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Introduction, course objectives 5% • The evolution of cities, urban planning history and visions, urban space, urban politics, governance, and economics, urban culture and society, urban planning theory and practice, sustainable planning 70% • Functional Planning 25%
Prerequisites:	ARC 403I
Textbooks/Learning Resources:	Textbook: LaGro, J. A. (2013). Site Analysis: Informing Context-Sensitive and Sustainable Site Planning and Design (3rd ed.). Wiley. Textbook: LeGates, R. T., & Stout, F. (Eds.). (2011). The City Reader. Routledge Textbook: Levy, J. M. (2012). Contemporary Urban Planning (10th ed.). Prentice Hall.
Offered (semester and year):	Second semester / Fourth year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Prof. Maad Aldelamy Dr. Ali El Shazly, Ms. Hanaa Dasan

ARC 415 – Soil Mechanics and Foundation

Course ID & Title	ARC 415 : Soil Mechanics and Foundation
Total credits awarded	3 Cr Hrs – 4 Contact Hrs`
Course Description (limit 25 words):	This course offers a comprehensive presentation of topics in the field of soil mechanics and foundations. It offers a perfect balance of theory and applications for engineers and non-engineers. Topics to be covered are Geologic Overview, Soil Types and Soil Structure, Soil Composition: Terminology and Definitions, Soil Properties, Mechanical Analysis of Soil, Soil Formation and Classification Systems, Stresses in Soil Masses, and Earth Pressure and Soil Foundations
Course Goals & Objectives (list):	• Understand the formation of soil and components. • List the significant engineering properties of soils and their characteristics, • List methods of determining the properties of soils. • Overview of soil mechanical and physical properties, classifications and settlements. • Comprehend the stress and strain theory. • The correlation between soil foundation and earth pressure.
Student Performance Criterion/ addressed (list number and title):	(16) Site Conditions (ability) (17) Structural Systems (understanding)
Topical Outline (including percentage of time in course spent in each subject area):	• Chapter 1: Introduction. • Chapter 2: Mechanical Analysis of Soil. • Chapter 3: Soil Properties. • Chapter 4: Soil Formation. • Chapter 5: Soil Classifications. • Chapter 6: Soil Compaction. • Chapter 7: Stress and Strain. • Chapter 8, 9 & 10: Earth Pressure- Soil Foundation.
Prerequisites:	ARCH 306 - Structural Analysis I & ARCH 314: Concrete & Steel Construction
Textbooks/Learning Resources:	Textbook: McCarthy D.F., 2006. Essentials of Soil Mechanics and Foundations Basic Geotechniques, 7h Edition, Prentice-Hall, New Jersey.
Offered (semester and year):	Second semester / Fourth year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Prof. Maad Aldelamy, Ms. Dima Ahmed.

ARC 417– Project Management

Course ID & Title	ARC 417 : Project Management
Total credits awarded	2 Cr Hrs – 2 Contact Hrs`
Course Description (limit 25 words):	This course aims to explain the role of the project manager as the architect responsible to conduct a construction site within a time frame, a specified budget and a quality level. The course teaches how to plan, organize and control the construction work. Students will run a practical work consisting in create an breakdown schedule for one project (Duration of each task, dependence between them, critical chain, milestones, risks, etc.).
Course Goals & Objectives (list):	• Learn and understand the construction project manager job. • Learn list of task needed to build a project. • Create and analyze a breakdown schedule of a construction project (milestones, risks, critical chain).
Student Performance Criterion/ addressed (list number and title):	(2) Critical Thinking (ability) - (7) Collaborative Skills (ability) - (24) Construction Cost Control (understanding) - (28) Architect's Administrate Roles (understanding) - (31) Leadership (understanding) - (32) Legal Responsibilities (understanding) - (33) Ethics and Professional Judgment (understanding)
Topical Outline (including percentage of time in course spent in each subject area):	• Construction management environment. 5% • Bid, proposal and contracts. 5% • Project planning and initiation. 5% • Construction scheduling. 5% • Project organization. 5% • Project control. 5% • Construction project execution. 5% • Green building and sustainable construction. 5% • Construction safety and health. 5% • Project communication. 5% • Create an breakdown schedule for one project (duration of each task, dependence between them, critical chain, milestones, risks, etc.). 50%
Prerequisites:	ARCH 411 – Comprehensive Design Studio II
Textbooks/Learning Resources:	Textbook: Tommy Ellis. Construction project management guide. Kindle edition. 2013 Textbook: Goerge Rizt and Sidney Levy. Total construction project management. Kindle edition. McGraw-Hill. 2013 Textbook: Tommy Ellis. Construction project management guide. Kindle edition. 2013 Textbook: S. Keaoki Sears, Glen A. Sears, Richard H. Clough. Construction project management. Kindle edition. Wiley. 2010
Offered (semester and year):	Second semester / Fourth year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Prof. Maad Aldelamy , Dr. Ali El Shazly Ms. Albertina Naranjo, Ms. Dima Khalid Afisa

ARC 501 – Advanced Design Studio

Course ID & Title	ARC 501 - Advanced Design Studio
Total credits awarded	5 Cr Hrs – 10 Contact Hrs`
Course Description (limit 25 words):	Developing a large scale continuous mix-used building, both horizontally and vertically responding to the context conditions. Working from the urban scale to the detailed scale.
Course Goals & Objectives (list):	• To be able to design complex buildings based on program, site analysis responding to an architectural reflection (geometrical system, etc). • Be able to express graphically an architectural project properly, from the urban scale to the construction details. • Work with geometry as a design tool. • Develop critical thinking as an architectural design tool.
Student Performance Criterion/ addressed (list number and title):	(10) Use of Precedents (ability) - (17) Structural Analysis (understanding) - (18) Environmental Systems (understanding) - (19) Life Safety (understanding) - (20) Building Envelope Systems (understanding) - (21) Building Service Systems (understanding) - (22) Building Systems Integration (ability) - (23) Building Materials and Assemblies (understanding) - (25) Technical Documentation (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Conceptual Design: (3 weeks) 25% • Preliminary Design: (3 weeks) 25% • Project Development: (4 weeks) 33,33% • Final Presentation: (2 weeks) 16,66%
Prerequisites:	ARCH 411 – Comprehensive Design Studio II
Textbooks/Learning Resources:	• Ball, Philip. The self made tapestry: Pattern formation in nature. Oxford University Press Paperbac. 2001 • Mills, B. Criss. Designing with Models: A Studio Guide to Architectural Process Models. John Wiley & Sons Ebook. 2011 • Moussavi, Farshid, The function of form. Actar. 2009 • Yeang, Ken; Green Design. From Theory to Practice. London: Black Dog, 2011. • Kasprisin, Ronald. Urban Design. The Composition of Complexity. New York: Routledge, 2011
Offered (semester and year):	First semester / Fifth year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Prof. Elsayed Amer, Dr. Mostafa Ramadan, Ms. Albertina Naranjo.

ARC 502 – Graduation Project Research

Course ID & Title	ARC 502 : Graduation Project Research
Total credits awarded	3 Cr Hrs – 4 Contact Hrs`
Course Description (limit 25 words):	This individual programming part of the graduation project selects the type of project with data collection and analysis. The research methodology follows theoretical framework and working techniques of architectural programming.
Course Goals & Objectives	• Determine the values of programming architectural projects. • Specify the human issues and the problem statement. • Set the research plan of data collection and analysis. • Communicate with the client through working sessions. • Define the space program and relationships. • Approach the rationale of problem solving.
Student Performance Criterion/ addressed (list number and title):	(4) Research Skills (ability) (12) Human Diversity (understanding) (15) Program Preparation (ability) (16) Site Conditions (ability) (25) Technical Documentation (ability) (26) Client Role in Architecture (understanding)
Topical Outline (including percentage of time in course spent in each subject area):	• Values and architectural programming (10 %) • Issues of architectural programming & the problem statement (10 %) • Planning the research structure (10 %) • Information gathering (10 %) • Detailed site analysis (10 %) • Work sessions with the client and users (10 %) • Developing the program (10 %) • Methods of evaluation (10 %) • Techniques of space program (10 %) • Conceptual design approach (10 %)
Prerequisites:	ARC 411 – Comprehensive Design Studio II
Textbooks/Learning Resources:	Textbook: Robert G. Hershberger (1999) *Architectural Programming and Pre-design Manager*, McGraw-Hill, New York.
Offered (semester and year):	First semester / Fifth year
Faculty assigned	Prof. Anna Laura Petrucci, Ms. Albertina Naranjo Ms. Dr. Mostafa Ramadan, Dr. A. El Shazly

ARC 511 – Graduation Project

Course ID & Title	ARC 511 – Graduation Project
Total credits awarded	6 Cr Hrs – 12 Contact Hrs
Course Description (limit 25 words):	Integrating knowledge and skills acquired during five years of architecture studies. Each student developing their own project, based on the research undertaken in ARCH502.
Course Goals & Objectives (list):	• Integrate in one project the knowledge and skills acquired during five years of studies in architecture. • Integrate engineering systems into architectural design. • Generate each phase of an architectural project with its corresponding architectural drawings. • Prepare a final presentation.
Student Performance Criterion/ addressed (list number and title):	(12) Human Diversity (understanding) - (14) Sustainable Design (understanding) - (17) Structural Systems (understanding) - (18) Environmental Systems (understanding) - (19) Life Safety (understanding) - (20) Building Envelope Systems (understanding) - (24) Construction Cost Control (understanding) - (26) Client Role in Architecture (understanding) - (27) Comprehensive Design (ability)
Topical Outline (including percentage of time in course spent in each subject area):	• Conceptual Design (3 weeks) 25% • Preliminary Design (3 weeks) 25% • Project Development (2 weeks) 16,66% • Working Documents (2 weeks) 16,66% • Completed project and Presentation of the Project (2 weeks) 16,66%
Prerequisites:	ARC 501 and ARC 502
Textbooks/Learning Resources:	• Abalos, Iñaki. The Good Life: A Guided Visit to the Houses of Modernity. Gustavo Gili. 2001 • Alexander, Christopher. Notes on the Synthesis of Form. Harvard University Press Paperback. 1964 • Ball, Philip. The self made tapestry: Pattern formation in nature. Oxford University Press Paperbac. 2001 • Mills, B. Criss. Designing with Models: A Studio Guide to Architectural Process Models. John Wiley & Sons Ebook. 2011 • Moussavi, Farshid, The function of form. Actar. 2009 • Yeang, Ken; Green Design. From Theory to Practice. London: Black Dog, 2011. • Kasprisin, Ronald. Urban Design. The Composition of Complexity. New York: Routledge, 2011. • Lang, John. Urban Design. A Typology of Procedures and Products. Oxford: Linacre House, 2005.
Offered (semester and year):	Second semester / Fifth year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Prof. ElSayed Amer, Prof. Anna Laura Petrucci, Ms. Albertina Naranjo

ARC 512 – Professional Practice

Course ID & Title	ARC 512 – Professional Practice
Total credits awarded	2 Cr Hrs – 2 Contact Hrs
Course Description (limit 25 words):	The course examines the legal, ethical and managerial roles and responsibilities of architects in the practice of architecture.
Course Goals & Objectives (list):	• Develop understanding of the complex relationship of practicing the architect's profession in Saudi Arabia • Provide knowledge of the legal responsibilities of the architect. • Explain the architect's code of ethics and potential conflicts of interest. • Explain the various legal steps and measures the future architect should consider in order to be eligible to register and practice in Saudi Arabia
Student Performance Criterion/ addressed (list number and title):	(26) Client Role in Architecture (understanding) - (28) Architect's Administrative Role (understanding) - (29) Professional Registration (understanding) - (30) Architectural Practice (understanding) - (31) Leadership (understanding) - (32) Legal Responsibilities (understanding) - (33) Ethics and Professional Judgment (understanding)
Topical Outline (including percentage of time in course spent in each subject area):	• Practicing in professional Organization (5%) • Legal Dimensions of Practice, Architects and the Law (5%) • Firm development ,Starting an Architecture Firm (10%) • Marketing and Public Relations. (10%) • Clint Relations. (10%) • Human Recourses Management. (10%) • Financial Management ,Financial Planning. (10%) • Project Definition, Define Project Services. (10%) • Project delivering, Programming. (10%) • Building Codes and Regulations. (10%) • Contracts and agreements, Type of Agreements. (10%) • Professional Practice in Saudi Arabia , Case Studies. (10%)
Prerequisites:	ARCH 501 - Advanced Design Studio
Textbooks/Learning Resources:	Textbook: Demkin, J. (Executive Editor), The Architect's Handbook of Professional Practice – Student Edition, The American Institute of Architects, 14th Edition, 2008, John Wiley & Sons, Inc. USA. Textbook: P.Piven, B.Perkins, Architect's Essentials of Starting, Assessing and Transitioning a Design Firm John Wiley & Sons, Inc. USA.2008.
Offered (semester and year):	Second semester / Fifth year
Faculty assigned (list all faculty assigned during the four semesters prior to the visit):	Prof. Gamal Elkholy, Ms. Samia Ayyoub.

Part III: Faculty Resumes

Title & Name: Dr. Ayman Al Musharaf (Dean of CADD)

Courses Taught (2012 – 2014):

Building Construction
Design Foundation
Design I
Design III
Graduation Project

Education Credentials:

05 - 11 Ph.D. in Architecture, Illinois Institute of Technology, Chicago, IL, USA
Dissertation title: Incorporating the Structure of Tall Buildings within an Architectural Form Generation Process
02 - 05 M.ARCH, Professional degree in Architecture, Illinois Institute of Technology, Chicago, IL, USA
Thesis title: Chicago Museum of Contemporary Architecture
94 -99 B.ARCH, Architecture and Building Science, King Saud University, Riyadh, KSA

Teaching Experience:

11 - 12 Assistant Professor, King Saud University, College of Architecture and Planning, Riyadh, KSA
05 - 08 Teaching Assistant, Illinois Institute of Technology, Chicago, IL, USA
99 – 01 Teaching Assistant, King Saud University, Riyadh, KSA

Professional Experience:

12 - Dean, College of Architecture Engineering and Digital Design, Dar Al Uloom University
11- 13 Chair of Student Complaints and Alumni Unit, College of Architecture and Planning, King Saud University
12 - 13 Independent Consultant, Al Saif Engineering Consultants, Riyadh, KSA
07 - 10 Senior Architect, Chicago Design Consortium International, cdci – Chicago, IL, USA
05 - 06 Staff Architect, Illinois Institute of Technology, Chicago, IL, USA
03 Nagle/Hartray Scholarship Award, Illinois Institute of Technology
98 - 01 Intern Architect, Al Buhaira Hotel Project, Dammam, KSA
97 Design Competition - King Saud Female Students Dormitory, 1st winner

Licenses/Registration:

Saudi Council of Engineers

Selected Publications and Recent Research:

1. Almusharaf, A., & Elnimeiri, M., (2010) A performance-based design approach for early tall building form development. the 5th International ASCAAD, 39-49
2. Elnimeiri, M., & Almusharaf, A., (2010) Architectural form and structure of tall buildings. International Conference on Sustainable Building Asia, 1(1)(2), 54-61.
3. Elnimeiri, M., & Almusharaf, A., (2010) The Interaction between sustainable structures and architectural form of tall buildings. International Journal of Sustainable Building Technology and Urban Development, 1(1), 35-41.

Professional Memberships:

Title & Name: Dr. Nada A. AlNafea (Vice Rector for Quality and Development - DAU)
(Vice Dean - CADD - DAU)

Courses Taught (2012 – 2014): NA

Education Credentials:

PhD in Architecture and Planning, London South Bank LSBU, London- Great Britain.
Bachelor of Architecture and Planning. interior architecture, College of Architecture and Planning, King Faisal University, Damman, KSA.

Teaching Experience:

Assistant Professor, Chairman of the Studio working group - development of the curriculum – selective projects and development with the students – Arbitration.
Interior Design program - Management of Housing & Institutions, College of Home Economics.
"Theory materials" practice - Humanities
Teaching Assistant, different housing facilities, home design project, embroidered furniture, household economy and heritage, founding the design spaces, the principles of Environmental Design, Housing and Environment"
Participate in the development of the curriculum and exams, interview students, assist in the process of teaching and monitoring grades.

Professional Experience:

2012 – Current	Vice Rector for Quality and Development, Dar Al Uloom University - Riyadh, KSA. Vice Dean, College of Architectural Engineering and Digital Design (CADD) – DAU.
2006 – Current	Assistant Professor, Interior Design program, College of Home Economics, King Abdulaziz University – Jeddah, KSA
2009 – 2011	Chair, Housing Management Department (Interior Design track - Housing management track), College of Home Economics King Abdulaziz University – Jeddah, KSA.
2009 – 2012	Chairman of curriculum committee (Diploma - BA - MA), Interior Design track - Housing management track, Prince Mohammad bin Fahd University - Dammam, KSA.
2008 – 2009	Head of Interior Design, Scientific Council member, Quality Assurance member and Continuing education committee member, Prince Mohammad bin Fahd University, Dammam, KSA.

Licenses/Registration:

The Saudi Council of Engineers

Selected Publications and Recent Research:

"The role of Academic Institutes in Reviving the Urban Heritage and the Conceptual Development of the Design Student in the Field of Architecture and Interior Design", *The First Meeting of National Urban Heritage*, 14-16 November, 2011, Jeddah, KSA. (with Ola Hashim)
"Women's Role in the Traditional Home Environment: case Study of Riyadh, Saudi Arabia", *Leonard Journal*, 1:6, November 2011.
"Distinctive Arabic Architecture in The Expo Exhibition: Political Vision", *Leonard Journal*, 1:5, September 2011. (with Prof. Meshary Anniem)
"The Woman and the Architectural Profession", *Albenaa Journal*, 207, Riyadh, January 2008.
"Women in Transition: The Development of House Design and the Social Change in Saudi Arabia*", Journal of Cultural Exchange*, Stuttgart, Germany, 2006.
"Riyadh's Vanishing Courtyard Houses", *Journal of the Royal Association for Asian Studies*, 1997.
"From a Handful of Dust", *Prince Charles Higher Institute of Architecture*, 1997.

Professional Memberships:

Saudi council of Engineers
The Saudi Umran society
Arab studies society – Great Britain

Title & Name: Prof. Gamal El Khouli (Vice Dean of Academic Affairs - CADD)

Courses Taught (2012 – 2014):

ARC 314 : Sanitary and Tech. Installations
ARC 403 : Housing and Urban Design
ARC 412 : Construction Documents. II
ARC 501 : Advanced design Studio

Education Credentials:

1995 Ph.D.,Architecture and Urban Plaanning Ain Shams University,Cairo,Egypt.& Stutgart University,Germany "Chanel Program''
1988 Certificate , Housing Design,"IAA" International Academy of Architecture-Sofia, Bulgaria
1988 M. SC, Architecture Design and Urban Planning, Ain Shams University, Cairo, Egypt.
1986 U.S Dipl., Urban Survey, International Inst. For aerospace and Human Senses, Enschde, Netherlands
1981 P.G.S., Architecture Design and Urban Planning, Ain Shams University, Cairo, Egypt.
1979 B.Sc., Architecture Design and Urban Planning, Ain Shams University, Cairo, Egypt.

Teaching Experience:

2014 - Now Professor of Architecture and Urban Design, Architectural Department Faculty Of Arch. Engineering and Digital Design - Dar A Uloom University, Riyadh, KSA .
2008 - Now Professor of Architecture and Urban Design,Architectural Department Faculty Of Eng.Ain Shams University,Cairo, Egypt. (On leave).
1999 2000 Assistant Professor, United Arab Emirates University, Visitors Professor

Professional Experience:

1980 – Present Principal Partner in Misr Group Consultants" M.G.C."Moustafa &Gamal El.Kholy Consultants Engineering, Architecture, Land-spacing, Urban Planning Group, Cairo, Egypt.
2005 – 2007 Technical Manager, Mohamed Alsabeg For Study & Consulting Engineering, Riyadh K.S.
2001 – 2003 Technical Manager, Abdallah Alsaif & Partner For Study & Consulting Engineering, Riyadh
1992 - 1995 Head Designer Engineer,"Graner Und Schwartz Buro."Stuttgart- Deutschland,(on leave).
1983 - 1984 Senior Engineer, Hassan Omar Assad - Consulting Engineering Office, Jeddah, KSA.

Licenses/Registration:

Consultant Engineer - Egyptian Engineering Syndicate

Selected Publications and Recent Research:

" CORRELATION BETWEEN INDOOR ENVIRONMENTAL QUALITY AND PRODUCTIVITY IN BUILDINGS."
" Heritage Cities; The Contribution of Heritage to Sustainable Urban Development, Luxor-Egypt
" The reflection of local and urban social privacy to achieve Architectural privacy
" Preservation of historic cities and sustainable development between theory and practice.
" The role of the financial and self-interaction of Community Participation in developing the city urban context and its environmentalreflections."A Case Study of Alexandria, The 4th International Conference on Architecture & Urbanization at the Outset of the 3rd Millenium, Assiut University, Egypt, March, 2000."

Professional Memberships:

Member of Scientific Journal Committee, Ain Shams University, Cairo, Egypt.
Member of The Union of Egyptian Architects.
Member of " IAA. " International Academy of Architecture - Sofia, Bulgaria

Title & Name: Prof. Arch. ANNA LAURA PETRUCCI, PhD

Courses Taught (2012 – 2014):

Arc 502 Graduation Project Research
ARC 511 Graduation Project

Education Credentials:

2002: PhD in DESIGN AND ARCHITECTURE'S THEORY, Università degli Studi “La Sapienza” di Roma
1995: STATE CERTIFICATION for the NATIONAL CHAMBER OF ARCHITECTS Rome
1994: MASTER DEGREE in ARCHITECTURE, Universitá degli Studi "La Sapienza” di Rome.
1993: MASTER DEGREE in MARKETING, MANAGEMENT, P.R. and COMMUNICATION, Centrostudi Comunicazione Enrico Cogno & Associati - Rome

Teaching Experience:

2014-present: Head of Architecture, Dar Al Uloom University Riyadh (KSA)
2011-present: Co-Director, Advanced Master in Management of Complexity in Architecture and Urban Planning, Università La Sapienza di Roma, Prima Facoltà di Architettura di Roma “Ludovico Quaroni” (Italy) University Paris Val de Seine (France)
2008-2011: Professor, Università La Sapienza di Roma, Prima Facoltà di Architettura di Roma (Italy)

Professional Experience:

2015: Juror in International Competition for MoFA, Riyadh
2014-present: Reviewer for Research Grants by Prince Salman Research Center, PSU, Riyadh (KSA)
2000-present: Artistic direction for various art works and show rooms
1998- present: Professional architect for various international projects

Licenses/Registration:

Licensed as professional architect in Italy

Selected Publications and Recent Research:

1. A.L. Petrucci, Hamburg 2013 -L’Industria delle Costruzioni n. 432, monographic number, 0-96, Edilstampa, Roma 2013
2. A.L. Petrucci, Il luogo dell’Identità sociale_ipotesi allestitive identitarie, 0-96, Aracne Editore (in press)
3. A.L. Petrucci, L'uomo e la fabbrica_ Il fascino seducente della sirena, 13-15, in: L.Coccia, M. D'Annuntiis, Paesaggio Carbon (2008)
4. A.L. Petrucci, Città Carbon. Le trasformazioni del sito produttivo e le relazioni con la città, 22-34 in: Quaderni AA/PP Architetture Ambienti Paesaggi Piceni (2007),
5. A.L. Petrucci, Trasformazione e costruzione di una città sull’acqua, 6-9 in Metamorfosi n. 57,(2005)
6. A.L. Petrucci, Una catena di eventi, 10-13 in Metamorfosi n. 57 (2005)
7. A.L. Petrucci, A sustainable approach to design, 23-25 in The aspects of equilibrium: architecture-urban design- plannig at threshold of UN decade of education for sustainable development, Wroclaw, 23-25 June 2005
8. A.L. Petrucci and L. Coccia, Vital spaces – The Nature of Joseph Beuys (video) in: L. De Domizio Durini, Joseph Beuys, Kassel 1977-Venezia 2007, 100 giorni di conferenza permanente, Presenze Evento Beuys, (2007)
9. A.L. Petrucci and L. Pagnini, Planning of integrated mixed use of residencial and facilities for re-use of dismissed harbour area of Hamburg (HafenCity Hamburg), in: L. Pagnini, Cittàportuali - Spazipotenziali, (2007)

Professional Memberships:

Title & Name: Dr. Sultan Al Otaibi

Courses Taught (2012 – 2014):

ARC 213: History of Architecture II
ARC 311: Intermediate Design Studio II
ARC 404: Environmental Control
DES 101: Design Foundation I

Education Credentials:

2011-2014	PhD in Energy and Sustainability in Buildings-Architecture and built Environment School, University of Nottingham, UK.
2009-2010	MSc in Energy and Sustainable building Design-De Montfort University, UK.
2001-2007	Bachelor degree in Architecture and building science- King Saud University, Riyadh, Saudi Arabia.

Teaching Experience:

Assistance professor, Department of Architectural Engineering, CADD, Dar Al Uloom University, Riyadh

Professional Experience:

2007-2009	Architect- Riyadh Municipality
2011-2013	President of Nottingham Saudi Students Club 31st (2011-2013).
2012-2013	Head of Saudi Architecture and Engineering Association in UK.

Licenses/Registration:

Selected Publications and Recent Research:

Alotaibi S, & Riffat S, (2015). Simulation Investigation and Economic Analysis of Low Carbon House with Different Insulation Scenarios proceeding of The 8th Saudi Students Conference, London.

Alotaibi S, & Riffat S, (2014). Vacuum Insulated Panel for Zero Carbon Buildings, proceeding of The 13th International conference on the Sustainable Energy Technologies, Geneva.

Alotaibi, S. S. and S. Riffat (2014). "Vacuum insulated panels for sustainable buildings: a review of research and applications." International Journal of Energy Research 38(1): 1-19.

Alotaibi S, & Riffat S, (2013). Simulation investigation of heating load for solid wall house retrofitted with Vacuum Insulation Panels, proceeding of The 12th International conference on the Sustainable Energy Technologies, Hong Kong.

Alotaibi S, & Riffat S, (2011) Vacuum Insulated Panel in Buildings Application, proceeding of The 11th International conference on the Sustainable Energy Technologies, Istanbul.

Professional Memberships:

Member of World Society of Sustainable Energy Technologies (WSSET)

Title & Name: Prof. Maad Abdulrazak Hassan Aldelamy

Courses Taught (2012 – 2014):

- Surveying
- Statics
- Concrete and Steel Construction
- Theory of Structures and Structural Analysis
- Soil Mechanics and Foundation Engineering
- Materials and Building Construction System

Education Credentials:

Ph.D., College of Architecture, Urban and Regional Planning, Texas A& M University-College Station 1990
Master in Engineering Management and Technology; Central Michigan University; Mt. Pleasant Mich. 1986
B. Sc. Civil engineering, Tri-State University; Angola, Indiana 1984

Teaching Experience:

Teaching Fellow, College of Architecture, Department of Urban Planning at Texas A&M Univ. 1987-1990
Professor, College of Architecture and Digital Design, Dar Al Uloom University, 2011- Present

Professional Experience:

Senior Project Manager, North Carolina Department of Transportation;	2005-2011
Senior Professional Engineer, Texas Department of Transportation; Dallas, Texas	1998-2005
Planning Engineer, Al-Rashid Group of Companies, Riyadh Saudi Arabia;	1992-1997
Civil Engineer, Texas Department of Transportation, Austin, Texas;	1990-1992

Licenses/Registration:

Professional Engineer, ID #94346 /Texas Board of Professional Engineers USA	2004-Current

Selected Publications and Recent Research:

1. Principle investigator, "Assessing the validity of using GIS remote digital imagery along with reconnaissance field surveys to determine and streamline all the engineering and environmental impacts" for all future proposed projects. NCDOT; January 2010.
2. Principle author of the Public Involvement Summary Report on the proposed Town of Carthage Bypass in North Carolina. The report emphasized the roll of public involvement in the planning process for the proposed Carthage Bypass. NCDOT December, 2009
3. Principle author and investigator of the Environmental Assessment (EA) study on the improvement of Hillandale Corridor, a business corridor in City of Durham, North Carolina. NCDOT September 2007.
4. Principle author and investigator "The Preliminary Corridors Evaluation Study Report" for the Proposed Carthage Bypass, in North Carolina. An extensive study report on the impact of the proposed alternatives for the Carthage Bypass. NCDOT August, 2009.

Professional Memberships:

Member, American Society of Civil Engineers (ASCE). Texas & North Carolina Chapter
Member, Inter-Agencies leadership Team, North Carolina (Projects Policy Improvements)
Former VP and lifelong Member, Urban Planners & Regional Science Group, Texas A&M University

Title & Name: Prof. MAMOUN HAMMOSH

Courses Taught (2013 – 2014):

- Mathematics.
- Physics.
- Structural analysis.

Education Credentials:

- Bachelor Of Science , Damascus University , College Of Civil Engineering , 1985 .
- Master Of Science , Oklahoma State University , College Of Arts and Sciences , 1988 - USA .
- Master Of Science , Oklahoma State University , College Of Civil Engineering , 1989 - USA .
- Doctor Of Philosophy In Mathematics 1993 University Of Arkansas - USA .
- Doctor Of Philosophy In Civil Engineering, 1993, University Of Arkansas - USA .

Teaching Experience:

- 20 Years in Damascus University and Yarmouk Private University .

Professional Experience:

- Senior Professional Engineer : engineering planning Company , Damascus 1993 - 2012 .
- Senior Project Manager : Company of studies and technical consultancy, Damascus 1985 - 1987 .

Licenses/Registration:

- Consultant of Engineering Committee in Damascus university for government projects 1995 - 2007 .
- Consultant of the Higher Institute of Earthquake studies in Damascus 2007 - 2013 .

Selected Publications and Recent Research:

- Boundary Element Analysis For Nonlinear Structures ,Damascus University Journal 2011 .
- Finite Element Approximation By Linear Isoparametric Triangles For Nonlinear Elliptic Partial
- Differential Equations (P-Laplacian), Damascus University Journal 2012 .
- Finite Element Approximation with Bilinear Isoperimetric Quadrilaterals For Structures governed by Nonlinear Partial Differential Equations , Damascus University Journal 2013 .

Professional Memberships:

- Member of referee committee of Damascus University Journal for Science and Engineering 1993 - 2013 .
- Member of the Higher Institute for building design against Earthquake in Damascus , Syria 2006 - 2013 .

Title & Name: Associate Prof. Mustafa Ramadan
Courses Taught (2012 – 2014):

DES 101 : Design Foundation 1
DES 102 : Descriptive Drawing 1
DES 112 : Descriptive Drawing 2
ARC 202 : Building Construction 1
ARC 402 : Construction Documents 1

Education Credentials:

Ph.D., in Architecture, University of Menofia, Egypt, 2005.
Master in Architecture, University of Menofia, Egypt 2001
Diploma in Architecture, Madrid University, Spain, 1999
B. Arch. (grade Distinction, top of Egypt Graduates of 1997) Tanta. University, 1997

Teaching Experience:

Assistant Prof. Chairman, Misr High Institute for engineering and technology- Mansoura- 10/2006.
Associate Prof. Faculty of Architecture, Dar Al Uloom University Sept. 2010 to present

Professional Experience:

Professional architect of educational and residential projects in Egypt

Licenses/Registration:

Not Applicable

Selected Publications and Recent Research:

1- " Activating the role of architectural designer in producing Compatible local architecture (monitoring and documentary for project of cultural garden for children in El-Saida Zeinab as one of the urban development projects)" - ARUP2006 in Ain shams University- October 2006 - Egypt.
2- " Researching view to put the Architectural Education in the prospects of creative, innovation and distinguished" - Arch Cairo 2007 – Cairo 20-22 march 2007.
3- " Compatibly between architecture and the resources of the renewable energy (criticism view for using the wind energy in buildings)" - ERJ 2010 - faculty of engineering in Menofia university- July 2010
4-"Towards better future in the maintenance works in the building houses in Egypt " published research in the researches of magazine of architectural and planning- faculty of architectural engineer -Arab Beirut university 2010.
5- "Towards Creative Architectural Concepts in Arabian Contemporary Architecture"- ARCHDESIGN ’14 on design methodologies - MSGSU (Mimar Sinan Fine Arts University)- Istanbul- Turkey - May 2014 .

Professional Memberships:

Member in Egyptian Engineering Syndicate.

Title & Name: Assistant Professor, Dr. Dina Ahmed Nafady

Courses Taught (2012 – 2014):

- Design Foundation 1& 2.
- Descriptive Drawing 1.
- Digital Photography & Image Processing.

Education Credentials:

Ph.D. in Abstract Art: Faculty of Applied Art, Helwan University, Egypt, 2006.
Postgraduate Studies for Ph.D: Faculty of Applied Art, Helwan University, Egypt, 2002.
Master in Cubism Art: Faculty of Applied Art, Helwan University, Egypt, 2000.
Postgraduate Studies: Faculty of Applied Art, Helwan University, Egypt, 1998.
Printing: Faculty of Applied Art, Helwan University, Egypt, 1997.

Teaching Experience:

1- Demonstrator (1997-2000) at Art & Design academy-The High Institute of Applied Arts, Egypt.
2- Assistant Lecturer (2000-2006) at Art & Design Academy-The High Institute of Applied Arts, Egypt.
3- Assistant Professor (2006 till now) at Art & Design Academy-The High Institute of Applied Arts, Egypt.
4- Assistant Professor (2006-2008) at Faculty of Education, 7th October University, Misurata, Libya.
5- Assistant Professor (collaborator) - Faculty of Education - Home Economics Department - Majmaha University - Saudi Arabia.

Professional Experience:

1- Participation in the preparation of the exhibition of Technical Competition of intellectual Literary and Scientific Annual Art for the students of universities and higher institutes in Libya -2007.
2- Participation in the exhibition accompanying the Fine Arts Exhibition Hall of the Second Book of International Expositions - Misurata - Libya – 2008.

Licenses/Registration:

Not applicable

Selected Publications and Recent Research:

1- A book titled *Philosophy of Abstraction in Modern Art* - the Arab Foundation for the printing and publishing, training, Cairo, Arab Republic of Egypt, Publications of the University of the seventh of October - Misurata - Libya - 2008.
2- Participation with a paper in the 1st Arabian Designers, International Conference, Egypt, 21-25 June 2012.
3- Participation with a (single) paper the 2nd Arabic International Conference, Faculty of applied art, Helwan University, Egypt, 8-10 October 2012.
4- Participation with a paper the 2nd Arabic International Conference, Faculty of applied art, Helwan University, Egypt, 8-10 October 2012.
5- Participation with a paper the 3rd International Conference, Faculty of applied art, Mansourah University, Egypt , 21- 23 November 2012.
6- Participation with a single paper the International Conference, National Research Centre (Manpower Development, Manufacturing Technologies Management in Industries), Egypt, 4-5 June 2013.

Professional Memberships:

- A member of Egyptian Engineers Association.
- A member of Egyptian Designers of Applied Arts Association.

Title & Name: Ms. Samia Ayyoub

Courses Taught (2013 – 2014):

ARC 411 : comprehensive Design Studio
ARC 304 : Landscaping and site planning
ARC 512 : Professional Practice
ARC 312 : Architecture in Arabia Region

Education Credentials:

2009: Master's Degree in Architecture (Very Good grade), Jordanian Science and Technology University.
1986: Bachelor of Architectural Engineering (Very Good grade), Yarmouk University Irbid –Jordan.
1981: General Secondary Education Certificate Examination (Excellent), Jordan

Teaching Experience:

2013 – present: Lecturer, Department of Architecture. Dar Al Uloom University, Riyadh
2010-13: Lecturer in the Faculty of Architecture and Design in the Jordanians University and Technology, Irbid –Jordan

Professional Experience:

- Planning Manager in the Greater Irbid Municipality(2008-2010)
- Head officer of the Building Design Department in The Greater Irbid Municipality.(200-2008)
- Head officer of the Studies Department /Planning & a member of locale city council(1991-2000)
- Architect Engineer in the Organizing Building Department, Then as Architect Engineer in the Studies Department/Planning Department, in The Greater Irbid Municipality(1989-1990)

Licenses/Registration:

Selected Publications and Recent Research:

1- 1'st Increase International Conference on Renewable Energy Approaches for the Spatial Environment 12-15 April 2008, Amman – Jordan
2- (Architecture and Urbanism and its development in the city of Irbid and its impact on the city and the agricultural area around it) a research published in the book "The city of Irbid past and present" the editor, Dr. Yussef Guaanema ,2008 ,the conference of " Irbid past and present" by the Arab Forum in cooperation with the Jordan Ministry of Culture ,November 2007
3- The challenges of the future vision for the development and regulation "Developing Irbids' old city" participation paper in the International Conference on Future Vision and Challenges for Urban Development Cairo-Egypt 20-22 December 2004

Professional Memberships:

Member of Jordan Engineers Association, Amman –Jordan

Title & Name: Mr. Francisco Javier Casas Cobo

Courses Taught (2012-2014):

ARC211 Architecture Design I
ARC302 Theory of Architecture
ARC313 Theory of Architecture II

Education Credentials:

Ph.D. (ABD), ETSA Madrid (Universidad Politécnica), 2012-2015.
M. Arch II, Analysis, Theory and History of Architecture, ETSA Madrid (Univ. Politécnica), 2012.
M. Arch., Escuela Técnica Superior de Arquitectura de Madrid (Universidad Politécnica), 2003.

Teaching Experience:

Lecturer, College of Architectural Engineering and Digital Design, Dar Al Uloom Univ., 2014-
Master Lecturer, ETSA Zaragoza (Universidad San Jorge), 2012, 2013, 2014.
Master Lecturer, Tri-Continental Master's Degree in Integrated Architectural Projects, Universidad Europea de Madrid, 2012, 2013, 2014.
Tutor, Architectural Association School of Architecture London, Summer School, 2012
Master Lecturer, Universidad de Salamanca, Spain, MADinUSAL, 2011, 2012, 2013, 2014, 2015.
Visiting Teachers' Program, Architectural Association School of Architecture London, 2011.
Master Lecturer, Istituto Europeo di Design, Madrid, Master in Interior Design, 2010 - 2013.

Professional Experience:

Vice-Chair, Department of Architectural Engineering, CADD, Dar Al Uloom University, 2015.
Co- founder and Partner in private office, bRijUNi architects, Madrid, 2003-2015.
Engr. Arch., Projects Management Department, Prince Sultan University, Riyadh, 2014.
Senior Coordinator, Asociación Sostenibilidad y Arquitectura, 2010-2012.

Licenses/Registration:

Registered Architect since 2012 at Colegio Oficial de Arquitectos de Madrid (Spain)

Selected Publications and Recent Research:

1-Abstract accepted and invited to oral presentation (paper in progress): The Shifting Roots of Modern Architecture from the 50s to the Contemporariness, 5th Annual International Conference on Architecture, 6-9 July 2015, Athens, Greece.
2-Abstract accepted (paper in progress): Ronchamp in the spotlight. From the 50s journals to the History, LC 2015, 50 years later, 18- November 2015, Valencia, Spain.
3-Paper: La crisis del Estilo Internacional en las revistas de los años 50 y su transcripción contemporánea, I International Conference on Architectural Design & Criticism. Critic All (ETSA Madrid), June 2014, Madrid, Spain.
4-Paper (Published in Proceedings and Book): Competitions for a better world, Magnus Rönn, Reza Kazemian, Jonas E. Andersson, The Architectural Competition: Research Inquiries and Experiences, AXL Books, Stockholm, pp. 469-490. ISBN-10: 9197859826.

Professional Memberships:

Member in Asociación Sostenibilidad y Arquitectura since 2012.

Title & Name: Mr. Mohamed Al Kahtani

Courses Taught (2012 – 2014):

ARC 301 : Intermediate Design Studio l
DES 113 : Digital Media for Design
DES 101 : Design Foundation l

Education Credentials:

M.S in Architecture – The University of New South Wales, Sydney, Australia 2012

B.S in Architecture - King Abdulaziz University, Jeddah . Saudi Arabia 2007

Teaching Experience:

2014 – present Lecturer, Department of Architectural Engineering, CADD, Dar Al Uloom University, Riyadh

Professional Experience:

Owner of architecture design office (Araa) 2014
1st. Prize, THE LISE ETTRIDGE MEMORIAL PRIZE . Sydney, Australia 2011

Licenses/Registration:

SAUDI COUNCIL OF ENGINEERS – Registration no. 4150

Selected Publications and Recent Research:

Not Applicable

Professional Memberships:

Architectural Engineer (Architecture) - Saudi Council of Engineers - Registration no.105096

Title & Name: Ms. Marta Giminez

Courses Taught (2012 – 2014):

ARCH 311 : Intermediate Design Studio II
ARCH 314 : Sanitary and Technical Installations
ARCH 401 : Comprehensive Design Studio I
ARCH 402 : Construction Documents I

Education Credentials:

- Candidate Ph.D., in Architecture, University of Seville, Spain, 2012/2016 (deadline)
- Diploma in Architecture Advanced Studies, University of Seville, Spain 2010
- Master in Landscape Preservation, Management and Design, International University of Andalusia and University of Seville, Spain 2007-2009
- Master in Urbanism, High School of Architecture, University of Seville, Spain, 2004
- B. Arch. High School of Architecture, University of Seville, Spain, 2004

Teaching Experience:

- Lecturer, Department of Architecture, Dar Al Ullom University, Riyadh, KSA, 2014-present
- Coordinator and trainer of the training program of the Public Space Project La Ciudad Amable (The Kind City), directed to government leaders, policy makers, and city planners, and organized by the Department of Urban Planning of the Andalusia Regional Government. 2012-2014
- Teacher Assistant, Department of Urbanism and Urban Planning, High School of Architecture, University of Seville, Spain, 2012-2014

Professional Experience:

- Coordinator of the Public Space Project La Ciudad Amable (The Kind City), directed to government leaders, policy makers, and city planners, and organized by the Department of Urban Planning of the Andalusia Regional Government. 2012-2014. Awarded Best Practice by UN Dubai International Award for Best Practices to Improve the Living Environment, 2014
- Membership in the Translational Research Project for the proposal of Córdoba as European Cultural Capital in 2016. Cultural Equipment and Infrastructure Planning for the city of Córdoba. First European Pays Med Award for Mediterranean Landscape. Best Practice by UN Dubai International Award for Best Practices to Improve the Living Environment, 2014
- Consultant in Urban Planning and Architecture, 2007-2014
- Junior Architect in Fernando Mendoza Architecture Office, Seville, Spain. National Price in Architectural Heritage, 2004-2007.

Licenses/Registration:

Selected Publications and Recent Research:

- Reina Jimenez, Marta. The articulation of the urban landscape. Case study: Three residential neighborhoods in Seville. Research Center Landscape and Territory. Government of Andalusia. 2012.
- Morales Soler, Eva and Reina Jiménez, Marta. Exiled women architects: architecture, women and habitat. In Architect women: a professional challenge. Edited by Instituto Juan Herrera. Madrid, 2009
- Gerena, Beatriz; Jaraba Bonet, Maite; Morales, Eva y Reina, Marta: (Dairas Group). Women, desert, architecture. In Páginas de Arquitectura de Sevilla. Edited by Grupo Joly. Sevilla, 2007.

Professional Memberships:

Member in Association of Architects of Seville.

Title & Name: Lecturer Hana' Da'san

Courses Taught (2013 – 2014):

ARCH 212 : Graphic Communication
ARCH 301 : Intermediate Design Studio I
ARCH 302 : Theories of Architecture I
ARCH 304 : Landscape and Site Planning

Education Credentials:

M.Ss. in Spatial Planning, German Jordanian University, Jordan, 2013.
B. Sc. In Architecture, University of Jordan, Jordan, 2008.

Teaching Experience:

Lecturer, Dar Al-Uloom University, 2013-present
Part time teacher Assistant, German Jordanian University, 2010
Part time teacher Assistant, University of Jordan, 2008-2010

Professional Experience:

2010 -2013, Voluntary worker at the Road Safety Centre of Excellence (RSCOE) at the German Jordanian University
2008 – 2009, Architect Planner at Sunna' Al-Aqar Consulting Engineers, Jordan

Licenses/Registration:

Not Applicable

Selected Publications and Recent Research:

Not Applicable

Professional Memberships:

Member in Jordanian Engineering Association

Title & Name: Lecturer. Hind Abdel Moneim Khogali

Courses Taught (2012 – 2014):

ARC.201 :History of architecture
ARC 213 :History of Architecture
ARC 211 :Architecture Design
ARC 312 :Architecture Of Arabian region
ARC313 :Theory Of Architecture
ARC404 :Environmental Control

Education Credentials:

Ph.D. (Student), at Faculty of Architecture, University of Khartoum, Khartoum, Sudan since 2009 until now.
Master in Environmental Studies, Khartoum University, Khartoum, Sudan, 2005
Bsc. Arch. Ain Shams University. Egypt, 1994.

Teaching Experience:

Lecturer, Khartoum Aviation Academy, Khartoum, Sudan, 2005-2006
Lecturer, Faculty of Architecture, Future University, Khartoum, Sudan, 2006-2009
Lecturer, Faculty of architecture, Dar Al Uloom University, Riyadh, KSA, 2010 until now.

Professional Experience:

1-Dar Consult (Khartoum Development Consulting Authority), at Architecture Design Department , specialist environmental engineer.
1994 -2002.
2-Akadabi Steel Factory for steel and prefabricated buildings. As Design Department Manger ,
2002-2005.
3-Al Ausala consultant company, 2006-2007.
4-Dr. Yagoub Consultant company , 2006-2008.
Coordinate and design more than 100 projects inside The Sudan.

Licenses/Registration:

Non Applicable

Selected Publications and Recent Research:

1-on going research of PhD with faculty of architecture, University of Khartoum : 'Approaching Sustainable Sudanese Rating System to evaluate the Eco Building with focus on thermal comfort in Residential Buildings in Greater Khartoum'.
2-Title of the Thesis Msc:"Impact of gaseous by products and pollutants waste water, at Khartoum Refinery on the environment"
Khartoum University .

Professional Memberships:

1-Full Membership of Sudanese Architectural Society- Jan-2009,Khartoum ,Sudan
2- Specialist Architectural Engineer, Engineering Council /Khartoum-Sudan.Jan-2009
3- Member of Royal British Institute of Architects(RIBA) since 2009.
4-Member of United State Green Building Council, USGBC since 2010
5-Member of The Green Committee in Saudi Green Building Forum since 2010

Title & Name: Joanna Feidi Jabsheh

Courses Taught (2012-2014)

DES 112: Descriptive Drawing II
IDE 417: Special Topics in Interior Design

Education Credentials

Master's Degree in Architecture, University of Jordan, Amman, Jordan, 2000.
Bachelor of Architecture, An-Najah National University, Nablus, Palestine. 1996

Teaching Experience:

Lecturer, Department of Interior Design, Prince Sultan University, 2007-2011
Lecturer, Department of Interior Design, Dar AL-Uloom University, 2012-to present
.
Professional Experience:

Head of the Interior Design Department in Dar Al-Uloum University, 2012 to present.
Architect/Interior Designer at MIMARIYA Azzah ALdeghaither Foundation, Riyadh, KSA. 2003-2004.
Planner at Ministry of Planning and International Cooperation, Ramallah, Palestine. 2000-2001.
Architect, Conservationist at Municipality of Nablus, Palestine. 1996-2000.
Architect at Riwaq Institution, Ramallh, Palestine. July-Nov. 1996.

Licenses/ Registration:

Not applicable.

Selected Publications and Recent Research:

Feidi, J. (2000). Public Participation and Heritage Conservation; A Critical Approach. Unpublished Master's Thesis.

Professional Membership:

Member in Jordanian Engineers Syndicate.

Title & Name: Lecturer R. Albertina Saseta naranjo

Courses Taught (2013-2014):

ARC 502: Graduation Project Research
ARC 511: Graduation Project
ARC 503: Project Management
ARC 412: Construction Documents II

Education Credentials:

2008 – Current	PHD candidate in Analysis of Architectural Projects in UPC of Barcelona, Spain.
2008	Advance Studios Diploma in Analysis of Architectural Projects in UPC of Barcelona, Spain.
2004	Master Degree in Urbanism in ETSA of Seville, Spain.
2004	Bachelor in Architecture in ETSA of Seville, Spain. 2º Prize Dragados for Graduation Project.

Teaching Experience:

2013 – Current	Lecturer, Department of Architecture, Dar al Uloom Univ. Riyadh (Saudi Arabia).
2008 - 09	Teach architectural design projects for five semesters. Universidad Iberoamericana Unibe. Santo Domingo (Dominican Republic)
2007	Do a Workshop. Geometry applied to the design of lighthouses. Universidad Iberoamericana Unibe. Santo Domingo (Dominican Rep.)

Professional Experience:

Professional architect: Owner and Director of UOB architects, Barcelona 2004 -2013, Spain

2010	1rst Prize International competition: Business incubator building ParcBit, Menorca (Spain).
2007	2º Prize international competition: Spanish Pavilion Expo Zaragoza.
2000	2º Prize national competition: “Anden 2000” Fundación Ferrocarriles Españoles.
1998 – 2005	Colaborations with some architectural offices, including FOA (London), Actar Arquitectura (Barcelona), Carme Pinos(Barcelona) and Morales&Mariscal (Sevilla).

Licenses/Registration:

Selected Publications and Recent Research:

2008	About Mariam Shambayati’s work: “Mariam is an eel, I’m not her grandmother and this isn’t art criticism”. Barcelona 2014 / “Concentrado de Gallina” Berlin 2011 / “La Voyerista de Almas”. Lisboa
2008	Magazine Carta España MAE Ministry. November 2006 Spanish Architects abroad.
2008	Arquitectura Viva. Monographic about Spanish pavilion in Expo Zaragoza 2008. ISBN: 978-84-612-4460-72004.
2004	Revista AW. Especial Public spaces. Competition Plaza de la Encarnación.
2004	Wettbewerbe Aktuell. Competition Plaza Encarnación.
2004	Research about Japanese Architects. Tutelage by Casa Asia (Scholarship Ruiz Clavijo).
2001-02	Collaborating with Fidas magazine (attached Foundation Architects Member COAS).

Professional Memberships:

Membership in COAC (Colegio de Arquitectos de Cataluña)

Title & Name: Lecturer Juwayria M. Osman

Courses Taught (2013 – 2014):

ARC 303: Building Construction II
ARC 305: Materials and Construction Systems
ARC 311: Intermediate Design Studio II

Education Credentials:

Masters, Urban Environmental Policy & Sustainable Development, 2012, Pratt, New York, USA
Bachelor of Science in Architecture Engineering with Honors, 1999.

Teaching Experience:

Lecturer, College of Architectural Engineering & Digital Design, Dar Al-Uloom University, 2013-Present.

Professional Experience:

- Graduate Researcher, Sustainable Communities, Pratt Institute, NY USA, 2009-2012.
- Interior Designer, Commercial Buildings, VizLabs Architectural, NY USA, 2005-2009.
- Senior Architect, Ministry of Physical Planning and Public Utilities, Sudan, 2003-2005.
- Junior Design Architect, Al Salam Development and Construction, Sudan, 1999-2003.

Licenses/Registration:

Registered Architect, Sudan

Selected Publications and Recent Research:

Osman, Juwayria (2012), *Utilizing Solar Energy in King Faisal Specialist Hospital & Research Center*, Pratt institute of Technology, New York, USA.

Professional Memberships:

Member, AIA Associate, USA.
Member, Sudanese Engineering Syndicate
Member, Sudanese Architecture Cooperative

Title & Name: Dr. Ali El Shazly

Courses Taught (2012 – 2014):

ARCH 304 Landscape & Site Planning
ARCH 413 Humanities in Architecture

Education Credentials:

2004 – 2006	Post-Doctoral (JSPS) – Environment & Technology Division, Hitotsubashi University,Tokyo
1996 – 2000	Doctor of Engineering in Arch – Graduate School of Engineering, Nagoya Imperial University, Japan
1994 – 1995	Masters Degree – Oxford School of Architecture, Oxford Brookes University, UK
1987 – 1992	Bachelor of Arch & Building Science (GPA 4.11/5.00) – King Saud University, Riyadh, Saudi Arabia

Teaching Experience:

2012 – present	Assoc. Prof., Department of Architectural Engineering, CADD, Dar Al Uloom University, Riyadh
2002 – 2006	Visiting Assistant Prof., Environment and Technology Division, Hitotsubashi University, Tokyo

Professional Experience:

2000 – 2010	Participant in international projects by Hitotsubashi University in Tokyo (funded by the Japanese Government)

Licenses/Registration:

Consultant Engineer (Architecture) – Saudi Council of Engineers – Registration no.105096

Selected Publications and Recent Research:

A. El Shazly, E. Iwasaki, G. Yutaka & K. Hiroshi "Regional Diversity and Residential Development on the Edge of Greater Cairo – Linking Three Kinds of Data – Census, Household Survey and Geographical Data – With GIS to Greater Cairo," in the book *"GIS-based Studies in the Humanities and Social Sciences,"* CRC - Taylor & Francis, UK, 2006, pp.191-210. (Editor: Prof. Atsuyuki Okabe, Graduate School of Urban Engineering & Director of GIS Center of Japan, University of Tokyo) (ISBN 0-8493-2713-X)

A. El-Shazly "On the Chronological Transformation of 'Place des Consuls' in Alexandria," *Journal of Architecture, Planning and Environmental Engineering, The Architectural Institute of Japan*, Vol. 531, May 2000, pp.195–203.

Recent research: Space Syntax

Professional Memberships:

Architectural Institute of Japan
City Planning Institute of Japan
Mediterranean World Studies (Hitotsubashi University in Tokyo)
International Seminar on Urban Form (ISUF), UK

Title & Name: Mr. Jabran Zaffar Khan

Courses Taught (2012 – 2014):

DES 103 : Digital Photography and Image Processing
ARC 212 : Graphic Communication
ARC 316 : 3D Modelling and Rendering

Education Credentials:

2008-2009 MSC in Multimedia Engineering from Nottingham Trent University (UK)
2005-2007 BSC in Multimedia from Nottingham Trent University (UK)

Teaching Experience:

Lecturer (2013-prsent) Dar Al Uloom University
Lecturer (2009-2012) Areena Multimedia

Professional Experience:

2013-present: Partner of a software and Production company (Faces Production), Freelance work for 3d modeling/animation, print media, Website development and design.

Licenses/Registration:

Not applicable

Selected Publications and Recent Research:

Not applicable

Professional Memberships:

Not applicable

Title & Name: Lecturer. Ms. Dima Ofaisa

Courses Taught (2012 – 2014):

ARC215 Theory of structure
ARC306 Structural Analysis
ARC415 Soil Mechanics and Foundations
ARC315 Concrete and Steel Construction

Education Credentials:

2014 MS Civil Engineer, University of Damascus, Syria
2006 BS Civil Engineering, University of Tishreen, Syria
2005 Diploma in ETABS analysis software
2002 Diploma in Computer programs; Auto CAD

Teaching Experience:

2011 – Present Lecturer, Department of Architectural Engineering, CADD, Dar Al Uloom University, Riyadh
2006 – 2010 Teaching Assistant, Department of Civil Engineering, Tishreen University, Latakia, Syria

Professional Experience:

Junior Civil Engineer, Council Engineering Consulting, Latakia, Syria 2006-2010

Licenses/Registration:

Consultant Engineer (Civil) - Syria Council of Engineers

Selected Publications and Recent Research:

Masters Research, University of Damascus, the development of methodology for the preliminary estimate for the implementation of sewage systems.

Professional Memberships:

Member in Syrian Engineering Syndicate

Title & Name: Instructor, Samar Ziadeh

Courses Taught (2011-2012\2012 – 2013):

Graphic Communication
Design Foundation I & II

Education Credentials:

PHD in progress , École Doctorale Lebanese University, Lebanon.
Master in Fine Art (4 years, 2007-2011), École Doctorale Lebanese University, Lebanon.
Diploma of High studies in Fine-Art (4 years, 1998-2002), Lebanese University, Lebanon.

Teaching Experience:

Lecturer. Lebanese University, Tripoli. Faculty of Arts. 2009-2011
Lecturer. “Tripoli Technical Institute”,Tripoli. Faculty of Architecture and Interior Design. 2001-2007.

Professional Experience:

Collective Art Exhibitions and Book illustrations

Selected Publications and Recent Research:

“The issue of museums in Lebanon and contemporary scenarios” in *Journal AL-TARIK*, September 2013

Professional Memberships:

The Lebanese Artists’ Association.
The WCC “World Craft Council.”

Appendix

Annual Report on the ARCH Program (2014)

To be submitted at least one full semester before the changes proposed are to be implemented

Institution	Dar Al Uloom University
College/Department	College of Architectural Engineering and Digital Design
Program Title and Code	Architecture (ARCH)
Program Coordinator/Director	Dr. Ayman Al Musharaf (Dean)
Date of Report	26-06-2014

1. (a) Modified Study Plan (166 CR)

First Year (Freshman)							
CS	100	Introduction to Computers	1	DES	101	Design Foundation I	3
SKILL	110	Learning Skills	1	DES	104	Descriptive Drawing I	2
MATH	100	Elementary Mathematics	4	DES	105	Freehand Drawing	1
PE	101	Physical Education 1	1	DES	106	Color Theory	2
ENGL	111	Oral Communication I	3	MATH	101	Mathematics I	4
ENGL	112	Grammar	2	PHY	101	General Physics	3
ENGL	113	Reading & Writing I	3	PE	102	Physical Education 2	1
			15				**16**
Second Year (Sophomore)							
DES	110	Design Foundation II	3	ARCH	211	Architecture Design I	4
DES	120	Descriptive Drawing II	3	ARCH	212	Theory of Arch. I	2
DES	103	Digital Photography & Image Process.	3	ARCH	213	Architectural Computing	3
ARCH	201	Introduction to Architecture	2	ARCH	214	Building Construction I	3
ARCH	202	History of Arch. I	2	ARCH	215	Construction Materials	3
ENGL	121	Oral Communication II	3	ARCH	216	Statics	3
ARAB	101	Arabic Language Skills	2				
			18				**18**
Third Year (Junior)							
ARCH	301	Intermediate Design Studio I	4	ARCH	311	Intermediate Design Studio II	4
ARCH	302	History of Arch. II	2	ARCH	312	Theory of Arch. II	2
ARCH	303	Environmental Control	2	ARCH	313	3D Modeling & Rendering	3
ARCH	304	Building Construction II	3	ARCH	314	Concrete & Steel Construction	3
ARCH	305	Landscape and Site Planning	2	ARCH	315	Principles of Urban Planning	2
ARCH	306	Structural Analysis I	3	ARCH	316	Architecture of Arabian Region	2
SKILL	120	Critical Thinking & Problem-solving	2	ARAB	102	Arabic Language Writing	2
			18				**18**
Fourth Year (Senior)							

ARCH	401	Comprehensive Design Studio I	4	ARCH	411	Comprehensive Design Studio II	4
ARCH	402	Sanitary & Technical Installations	3	ARCH	412	Humanities in Architecture	2
ARCH	403	Lighting and Acoustics	3	ARCH	413	Community Housing Design	2
ARCH	404	Construction Documents I	3	ARCH	414	Construction Documents II	3
ENGL	123	Reading & Writing II	3	ARCH	415	Soil Mechanics and Foundations	3
ARCH		Elective I	2	ENGL	122	IELTS Exam Preparation	2
				ARCH		Elective II	2
			18				**18**
Fifth Year							
ARCH	501	Advanced Design Studio	5	ARCH	511	Graduation Project	6
ARCH	502	Graduation Project Research	3	ARCH	512	Professional Practice	2
ARCH	503	Project Management	2	SKILL	121	Leadership & Teamwork	2
ISLM	101	Introduction to Islamic Doctrine	3	ARCH		Elective IV	2
ARCH		Elective III	2				
			15				**12**

1. (b) Proposed Modifications

Overview of modifications for the core curriculum prospects the substantial equivalency of the National Architectural Accrediting Board (NAAB) as follows:

Adding the following courses to the core curriculum (+5 credits):

Course Title	**(LT, LB, CR)**
Freehand Drawing	(0, 2, 1)
Color Theory	(1, 2, 2)
Introduction to Architecture	(1, 2, 2)

Omitting the following courses (-5 credits):

Surveying	(1, 2, 2)
Theory of Structure	(2, 2, 3)

Moving the following courses from the elective to the core curriculum (+6 credits):

General Physics	(2, 2, 3)
3D Modeling & Animation	(1, 4, 3)

Increasing the number of credits for the following courses by one credit (+6 credits):

Digital Photography & Image Process.	(0, 6, 3)
Descriptive Drawing II	(0, 6, 3)
Architecture Design I	(0, 8, 4)
Sanitary & Technical Installations	(2, 2, 3)

Concrete and Steel Construction	(2, 2, 3)
Soil Mechanics & Foundations	(2, 2, 3)

Reducing the number of credits for the following courses by one credit (-16 credits):

Descriptive Drawing I	(0, 4, 2)
Design Foundation II	(0, 6, 3)
History of Architecture I	(2, 0, 2)
History of Architecture II	(2, 0, 2)
Theory of Architecture I	(2, 0, 2)
Theory of Architecture II	(2, 0, 2)
Landscape and Site Planning	(2, 0, 2)
Architecture of Arabian Region	(2, 0, 2)
Housing and Urban Design	(2, 0, 2)
Comprehensive Design Studio I	(0, 8, 4)
Comprehensive Design Studio II	(0, 8, 4)
Principles of Urban Planning	(2, 0, 2)
Elective I	(2, 0, 2)
Elective II	(2, 0, 2)
Elective III	(2, 0, 2)
Elective IV	(2, 0, 2)

Adding the Following courses to the elective pool:

Special Topics in Computer Aided Design	(2, 0, 2)
Building 3D Virtual Environment	(2, 0, 2)
Advanced Graphic Communications	(2, 0, 2)
History & Theory of Architecture III	(2, 0, 2)
Islamic Architecture	(2, 0, 2)
Advanced Urban Design	(2, 0, 2)
Traditional Architecture in The Gulf Countries	(2, 0, 2)
Special Topics in Architecture	(2, 0, 2)
Thermal Environmental Systems	(2, 0, 2)

Renewable Energy Systems	(2, 0, 2)
Environmental Impact Assessment	(2, 0, 2)

Modify only the title for the following courses:

From “Graphic Communication” to “Architectural Computing”

From “3D Modeling and Animation” to “3D Modeling and Rendering”

From “Housing and Urban Design” to “Community Housing Design”

From “Materials and Construction Systems” to “Construction Materials”

From “Structural Analysis” to “Structural Analysis I”

The awarded degree upon these changes of the program is **Bachelor of Architecture**

(c) Proposed date of implementation:

First semester 2014-2015

2. Reasons for Modification

The study plan has been modified according to the experience of the faculty members and meeting the market demands based on the discussions with practitioners and decision makers in the Saudi development policy, while corresponding to the NAAB benchmarking criteria of internationally accredited programs. In this respect, the basic design adds three core courses of freehand, coloring and introductory architectural drawing techniques. Meanwhile, computer graphics are further shifted beyond the design basics of manual practicing. Digital media, nevertheless, enriches the study plan by switching a 3D modeling course from elective to core requirement. The elective pool itself adds various fields of study, which are classified into advanced digital media, theoretical fields of design, and environmental control range of courses. Thus, the elective extension maximizes the choice of interactive topics with the core curriculum. Further amendment of the study plan substitutes two engineering courses of surveying and theory of structure. The former is compensated by a more integrative introductory course to the architectural practice, while the latter avoids the redundancy with the already existing structural analysis course. Another requirement was the missing course of general physics that has been offered as an elective, but now occupies an early core position.

On the other hand, the number of credits per course has been compared to renowned programs of to-date NAAB accreditation such as King Saud University and the top-tier ranking of selected architectural programs in the United States. Accordingly, several courses proved to be of more (or less) credits in average. In particular, the second design foundation course reduces one credit, which is added to the following first design studio course. Also the two comprehensive design studios at the fourth level got reduced by one credit per each. Thus, all design studio courses become more homogenous with 4-credits in common, except the two final studios of graduation that keep emphasized by 5 and 6 credits respectively. The Basic two descriptive drawing courses compensate each other through reducing the first and increasing the second by one-credit. The reason refers to the increased number of basic design courses at the first level, thus relaxing the contents of the first descriptive drawing course. Also the needed more credit for the second descriptive drawing course of comprehensive skills with regard to ‘perspective’ and ‘shade and shadow’ studies. In order to update with the digital advancement, computer graphics increases the first course of ‘digital photography and image processing’ by one-credit to make it of similar credits as the other computational courses of extended applications. Moreover, technical courses of required lab hours elevate any one course from 2 to 3 credits at minimum. This has been specified for ‘sanitary and technical installations’, ‘concrete and steel

construction' and 'soil mechanics and foundation' courses. On the inverse, theoretical courses reduce the excessive 3-credits per each to 2-credits in common to the average benchmarking results. This includes history and theory of architecture courses, architecture of Arabian region, landscape and site planning, housing and urban design, and principles of urban planning courses. Although elective courses include computer and technical type of courses, the benchmarking comparison showed the preference of 2-credits per each in a wide variety rather than extensive credits of shortened list. In conclusion, proposed changes attempts to homogenize the study plan of comparable credits with balanced ratios that satisfies the classified benchmark by course. Meanwhile, we would like to note that the Department decided to offer two essential courses (Physics & 3D modeling) as electives until the modified study plan is approved for implementation.

In another consideration, proposed change of title for some courses enhances the curriculum's comprehension. With regard to the architectural computer applications, the course titled 'graphic communication' suggests the change to 'architectural computing' of computer aided design contents. Also the course '3D modeling and animation' supposes the change of the word 'animation' to 'rendering' in consistency with the course applications. The other course of 'housing and urban design' focuses more on the topical essence to become 'community housing design'. Similarly, the course titled 'materials and construction systems' is made more concise as 'construction materials'. In a different consideration, the course 'structural analysis' just adds the indication 'I' as the first course in common with different engineering extends. In general, all courses of 'ARC' coding becomes 'ARCH' to prevent the confusion with the archeological academic implication.

3. Objectives to be Achieved

The main objectives of the proposed changes are to:

1. Updating the program in accordance with the NAAB accreditation requirement including the 32 student performance criteria (SPCs) specified by the NAAB conditions.
2. Optimizing the courses learning outcomes with respect to the required technical and theoretical skills
3. Enrich the program with necessary knowledge on basic sciences.
4. Structure the study plan in ideal load distribution for best student performance.
5. Increase opportunities of elective courses for continual program development.
6. Integrate the various domains of learning for best professional practice.

4. Process for Evaluating Achievement of Objectives

Special committee of Program Accreditation and Development evaluates the achievement of set objectives. Members of the committee include program executives and international experts of NAAB accreditation as well. This has been verified through the application for NAAB accreditation that is in process with the first NAAB visit decided and scheduled during this Spring of 2014. Meanwhile, each staff member of the program has been assigned to a course committee by specialization. Through these course-level committees, continuous process of evaluation develops each course specification according to the NCAAA format.

On the level of Dar Al Uloom University, all courses are managed and evaluated through the University web. In this process, several actions of course evaluation are taken as follows:

1. Strategies for obtaining student feedback and effectiveness of teaching: Student evaluation of the course according to the NCAAA form.

2. Other Strategies for evaluation of teaching by instructor or department: Peer review of online

question banks, quality of assignments, teaching materials, and other online learning resources in the learning management system (LMS).

3. Processes for verifying standards of student achievement: There are 3 types of induction sessions conducted to help instructors improving their teaching strategies. 1) Technology induction sessions where the teachers are briefed on how to use the LMS for effective course delivery. These sessions are conducted once per semester for all staff. 2) Generic induction sessions on teaching strategies by faculty members from the College of Education and Human Development. These sessions are conducted once per semester for new staff. 3) Subject-specific coordination meetings by the course committee. In these meetings, members of the course committee coordinate the pacing schedule, exchange good practices, agree on deadlines, prepare assessment guidelines, and adjust course plans as the need arises.

4. Course Effectiveness and Improvement Plans: The course committee uses input from the student evaluation and the results of students' performance to plan future improvements.

5. Impact (if any) on Students Already Enrolled in the Program

While proposing the above-listed modification, the Program Accreditation and Development Committee at the College took into consideration the impact of such changes on enrolled students and, hence propose necessary procedures to ensure the affected student graduation on time and without increase in their total credits. The procedures have been specified as follows:

1- Courses with increased or decreased credits are made equivalent to the counterpart courses in the original study plan. See Table-1.
2- Course Equivalency is planned to manage the process of transferring students between the original and modified study plans. See Table-1.
3- Courses moved from the elective pool to the core program will continue to be counted as electives for students who already took such courses. See Table-2. *Kindly refer to the "Reason for Change" part above regarding these two courses*.
4- Courses with decreased credits outweigh those with increased ones, thus no concern of students exceeding the total number of credit hours as per the original study plan.
5- Both the "added" and "omitted" courses were meant to be limited in terms of number and credit hours. This helped in minimizing the changes between the" original" and "modified" study plans and in making the student transfer process between the two study plans relatively simple.

Table-1. Course Equivalency between the original and modified study plans.

Existing Courses					Equivalency Courses				
Code	**Course**	**CR**	**LT**	**LB**	**Code**	**Course**	**CR**	**LT**	**LB**
CORE COURSES									
DES 102	Descriptive Drawing I	3	0	6	DES 104	Descriptive Drawing I	2	0	4
	-	-	-	-	DES 105	Free Hand Drawing	1	0	2
DES 111	Design Foundation II	4	0	8	DES 110	Design Foundation II	3	0	6
	-	-	-	-	DES 106	Color Theory	2	1	2
ARC 214	Surveying	2	2	0	ARCH 201	Introduction to Architecture	2	1	2
ARC 215	Theory of Structure	2	2	0	ARCH 306	Structural Analysis I	3	2	2
ARC 306	Structural Analysis	3	2	2	-	-	-	-	-
ARC 212	Graphic Communication	3	0	6	ARCH 213	Architectural Computing	3	0	6
DES 103	Digital Photography & Image Processing	2	0	4	DES 103	Digital Photography & Image Processing	3	0	6

DES 112	Descriptive Drawing II	2	0	4	DES 120	Descriptive Drawing II	3	0	6
ARC 211	Architecture Design I	3	0	6	ARCH 211	Architecture Design I	4	0	8
ARC 314	Sanitary & Technical Installations	2	1	2	ARCH 402	Sanitary & Technical Installations	3	2	2
ARC 315	Concrete & Steel Construction	2	1	2	ARCH 314	Concrete & Steel Construction	3	2	2
ARC 415	Soil Mechanics & Foundations	2	1	2	ARCH 415	Soil Mechanics & Foundations	3	2	2
ARC 201	History of Architecture I	3	3	0	ARCH 202	History of Architecture I	2	2	0
ARC 213	History of Architecture II	3	3	0	ARCH 302	History of Architecture II	2	2	0
ARC 302	Theory of Architecture I	3	3	0	ARCH 212	Theory of Architecture I	2	2	0
ARC 313	Theory of Architecture II	3	3	0	ARCH 312	Theory of Architecture II	2	2	0
ARC 304	Landscape & Site Planning	3	2	2	ARCH 305	Landscape & Site Planning	2	2	0
ARC 312	Architecture of the Arabian Region	3	2	2	ARCH 316	Architecture of the Arabian Region	2	2	0
ARC 403	Housing and Urban Design	3	2	2	ARCH 413	Community Housing Design	2	2	0
ARC 414	Principles of urban Planning	3	2	2	ARCH 315	Principles of urban Planning	2	2	0
ARC 401	Comprehensive Design Studio I	5	0	10	ARCH 401	Comprehensive Design Studio I	4	0	8
ARC 411	Comprehensive Design Studio II	5	0	10	ARCH 411	Comprehensive Design Studio II	4	0	8
ELECTIVE COURSES									
	Elective I	3	3	0		Elective I	2	2	0
	Elective II	3	3	0		Elective II	2	2	0
	Elective III	3	3	0		Elective III	2	2	0
	Elective IV	3	3	0		Elective IV	2	2	0
Total		**76**	**41**	**70**	**Total**		**67**	**34**	**66**

Table-2. Courses moved from the elective pool to the program core.

Elective Courses (original study plan)					**Core Courses (modified study plan)**				
Code	**Course**	**CR**	**LT**	**LB**	**Code**	**Course**	**CR**	**LT**	**LB**
ARC 316	3D Modeling and Animation	3	1	4	ARCH 313	3D Modeling and Rendering	3	1	4
PHY 101	General Physics	3	2	2	PHY 101	General Physics	3	2	2
Total		**6**	**2**	**8**	**Total**		**6**	**2**	**8**

6. (a) Resources Required (if any) (including equipment, facilities, reference material etc.

Already several laboratories are being furnished and equipped to meet all program requirements such as physics, materials and more computer laboratories. This has been accelerated to meet the NAAB Visit-1 in April 2014.

(b) Have funds been allocated for the provision of these resources? Yes ☑ No ☐

If not, What provision has been made for provision of resources required

7. Faculty Requirements (if any) e.g. Faculty recruitment or retraining, professional development, etc.

The University already employed faculty staff to cover all program courses, with separate staff for male and female sections.

Pre-modified Study Plan (172 CR):

First Year (Freshman)							
CS	100	Introduction to Computers	1	DES	101	Design Foundation I	3
SKILL	110	Learning Skills	1	DES	102	Descriptive Drawing I	3
MATH	100	Elementary Mathematics	4	DES	103	Digital Photography & Image Processing	2
PE	101	Physical Education 1	1	PE	102	Physical Education 2	1
ENGL	111	Oral Communication I	3	MATH	101	Mathematics I	4
ENGL	112	Grammar	2	ARAB	101	Arabic Language Skills	2
ENGL	113	Reading & Writing I	3				
			15				**15**
Second Year (Sophomore)							
DES	111	Design Foundation II	4	ARC	211	Architecture Design I	3
DES	112	Descriptive Drawing II	2	ARC	212	Graphic Communication	3
DES	113	Digital Media for Design	3	ARC	213	History of Architecture II	3
ARC	201	History of Architecture I	3	ARC	214	Surveying	2
ARC	202	Building Construction I	3	ARC	215	Theory of structure	2
ARC	216	Statics	3	ENGL	121	Oral Communication II	3
ARAB	102	Arabic Language Writing	2	ENGL	123	Reading & Writing II	3
			20				**19**
Third Year (Junior)							
ARC	301	Intermediate Design Studio I	4	ARC	311	Intermediate Design Studio II	4
ARC	302	Theory of Architecture I	3	ARC	312	Architecture of Arabian Region	3
ARC	303	Building Construction II	3	ARC	313	Theory of Architecture II	3
ARC	304	Landscape and Site Planning	3	ARC	314	Sanitary and Technical Installations	2
ARC	305	Materials and Construction Systems	3	ARC	315	Concrete and Steel Construction	2
ARC	306	Structural Analysis	3	ISLM	101	Introduction to Islamic Doctrine (Fiqh)	3
SKILL	120	Critical Thinking & Problem-solving	2	ENGL	122	IELTS Exam Preparation	2
			21				**19**
Fourth Year (Senior)							
ARC	401	Comprehensive Design Studio I	5	ARC	411	Comprehensive Design Studio II	5
ARC	402	Construction Documents I	3	ARC	412	Construction Documents II	3
ARC	403	Housing and Urban Design	3	ARC	413	Humanities in Architecture	2
ARC	404	Environmental Control	2	ARC	414	Principle of Urban Planning	3
ARC	406	Lighting and Acoustics	3	ARC	415	Soil Mechanics and Foundations	2
				ARC	417	Architectural Programming	2
			16				**17**
Fifth Year							
ARC	501	Advanced Design Studio	5	ARC	511	Graduation Project	6
ARC	502	Graduation Project Research	3	ARC	512	Professional Practice	2
		Elective I	3			Elective III	3
		Elective II	3			Elective IV	3
SKILL	121	Leadership & Teamwork	2				
			16				**14**

Report of NAAB Visit I

Kenneth A. Schwartz, FAIA

MEMORANDUM

Date: 23 April 2014

To: National Architectural Accrediting Board

From: Kenneth A. Schwartz, FAIA

Reference: Substantial Equivalency Visit One
Dar Al-Uloom University, Riyadh, Kingdom of Saudi Arabia

Degree: Bachelor of Architecture
(five-year program, 166 credit hours + two-month field training)

Introduction

In a letter to the NAAB dated January 13, 2014, Dr. Ayman Almusharaf, Dean of the College of Architectural Engineering and Digital Design at Dar Al-Uloom University (DAU), stated the program's intention to seek substantial equivalency (SE) from the NAAB for the Bachelor of Architecture degree.

Following review of the Institutional Overview submitted by DAU, the NAAB agreed to conduct visit one on April 21-22, 2014. The visit was completed by Kenneth Schwartz, FAIA, Favrot Professor and Dean of the Tulane School of Architecture and a former president of the NAAB.

The purpose of visit one is to explain the NAAB *Conditions for Substantial Equivalency* and the *Procedures for Substantial Equivalency*, confirm the institution's commitment to achieving the substantial equivalency designation, and review the physical, financial, human, and information resources committed to the program.

The program leadership and faculty understand the NAAB Substantial Equivalency (SE) process and the distinctions between SE and NAAB accreditation.

REVIEW OF THE RESOURCES COMMITTED TO THE PROGRAM

Administration

The program has a clear administrative structure that has worked well in launching this new Bachelor of Architecture degree within the context of a new university. The dean, vice-dean, and program chair work well as a team and enjoy the respect of students, faculty, and the upper administration. The rector oversees the academic integrity and trajectory of all programs at DAU. He is an engaged leader who brings substantial academic experience to his role within the institution. The rector and founder of the institution have a clear and unique vision for the institution and architecture's role. It is notable that both administration and faculty include both men and women, with both genders occupying key roles.

Faculty

In the short period of the program's existence, a strong group of faculty has been assembled with diverse educational and practice experiences. The majority of faculty have Ph.D. degrees

and all have master's degrees as a minimum. Most of these advanced degrees are from programs beyond Saudi Arabia, and the faculty themselves are internationally diverse. In meetings with the faculty, there was a clear sense of commitment to the mission of the program and university and a nurturing concern for the students.

Students

The meeting with students was very well attended, and the students were engaged and articulate. During the tour of the building, it was easy to see how the students work with their faculty and each other in a professional manner. The English skills of DAU students are impressive. Apparently most of the students arrive with strong ability levels already, and since the instruction is in English, their communication skills in this second language gain in quality over the course of their five-year program. It is clear that graduates from this program will be able to practice in international settings where English is often the default language for professionals from various countries, and many are likely to pursue advanced degrees abroad through the support of the Saudi government.

Physical Resources

The program enjoys a full range of physical resources for the benefit of students and faculty. The university building is symmetrical, allowing separate sides for men and women along with a central "green zone" in which the genders may be present at the same time in various configurations. It is impossible to fully express in writing the delicate manner in which the program manages to balance an innovative academic model of both genders in one school with the imperative of respecting long-standing cultural and religious traditions. For the students and faculty, the way that the genders operate simultaneously while accomplishing the necessary accommodation seems almost natural and seamless. It takes a good deal of care and respect on the part of everyone to make this work.

Financial Resources

The university has clearly committed to the launch of this new program. Resources have been directed toward the construction of a large new building that encompasses the entire university. In addition, the architecture program has been supported in creating an entire floor within the building (formerly the basement), which will provide 8,000 square meters of new space. The founder is also the owner of this university, and his vision is backed up by substantial resources that are directed toward the creation of this university as well as other ventures that benefit society (including hospitals and involvement with K-12 education).

Human Resources

As noted already, students, faculty, program leadership and university leadership constitute a well organized and positive combination of individuals who all seem deeply committed to the success of the program and advancement of quality.

Information Resources

The library and other avenues of information resources are still in the early stage of development. Basic student needs are met, but there is also an ongoing plan to strengthen and expand the library holdings as well as work that is developing toward the advancement of a more robust and effective website for the program.

Curriculum

The curriculum is clearly organized, including the traditional array of courses across a spectrum of subject matters. The design studio curriculum is deliberately constructed to develop skills in a

progressive manner, with evidence of ambitious projects in the upper levels of the program. The first class will be graduating this spring, and the program is using its own assessment of the student work as a means of advancing the quality of the curriculum on an ongoing basis.

Admission to the Program

This area will be examined in subsequent visits as there was not information (or time) available to review this during the first visit. At the same time, based on my encounters with students, it should be noted that the students are highly capable and qualified for university-level study. There must be a robust process of recruitment and admissions assessment to have students like these in a program.

HISTORY AND MISSION

History and Mission of the Institution

See the DAU Institutional Overview, pages 4–5.

History and Mission of the Program

See the DAU Institutional Overview, pages 6–9.

Self-Assessment and Long-Range Planning

See the DAU Institutional Overview, pages 25–29.

Strengths of the Architecture Program (excerpt from Institutional Overview, p. 28)

1. Achievements of extracurricular program activities.
2. Accreditation; CADD has started the accreditation process for the Arch program by the Saudi National Commission for Academic Accreditation and Assessment (NCAAA), in addition to the application to the National Architectural Accrediting Board, NAAB, seeking for the Substantial Equivalency.
3. Duplicated physical recourses for male and female sections.
4. The design studios culture; are planned and designed according to the international standards in terms of area, drawing stations, and furniture.
5. National, regional and international connections.
6. Human resources of various educational backgrounds.
7. Continual support by DAU administration.
8. First Saudi ARCH program of male and female sections.
9. Affordable financial recourses.
10. Exploiting the spacious auditorium for holding academic conferences and workshops.

Weaknesses of the Architecture Program (excerpt from Institutional Overview, p. 29)

1. More labs are needed, such as material, environmental, structural & photography labs.
2. Week contribution of faculty members in the research and consultation fields.
3. Lack of mutual educational agreements with regional and international universities.
4. Few qualified supporting staff, research assistants and lab technicians.
5. Few professionals and experts from both public and private sectors participate in the teaching process.
6. A market study survey is needed to identify the professional needs.

Program Challenges and Future Directions (excerpt from Institutional Overview, p. 29)

1. Maintain and develop the strengths and solving up the weaknesses;
2. Ensure the continuation of the self-evaluation process
3. Set a committee for program documentation and archiving.
4. Recruiting a qualified supporting staff, technical and administrative.

5. Achieving the NAAB and NCAAA academic accreditations.
6. Establishing more needed lab.
7. Encouraging faculty members to publish in internationally refereed journals.
8. Maintaining the high standards of teaching for students.
9. Securing the job-finding of graduates
10. Cooperating with well-known universities of international NAAB accreditation.
11. Developing the consultation and training unit of CADD.

COMMITMENT OF THE INSTITUTION TO ACHIEVING THE SUBSTANTIAL EQUIVALENCY DESIGNATION

There is a clear commitment on the part of the leadership and faculty to achieve NAAB Substantial Equivalency. Dar Al Uloom University has already gone through a rigorous process of institutional accreditation within Saudi Arabia, and the administration clearly understands the structure and many dimensions involved in their plan and hope to achieve the recognition afforded by Substantial Equivalency. They do not see this as an “end,” but instead as a part of their continuing process of achieving excellence in their distinctive mission. DAU understands and supports the serious financial commitment that this process involves, and this, along with many other aspects of their engagement with the architecture program in particular, demonstrates the value and importance they attach to the development of a strong architecture program within their university. In a vibrant and rapidly growing economy like that which exists in Saudi Arabia, the architecture profession needs many more well-educated women and men. The state-supported universities alone cannot supply the number or diversity of students needed to support this growth, and the possibility of increased opportunities for women makes the DAR mission all the more noteworthy.

ASSESSMENT OF THE READINESS OF THE PROGRAM TO COMPLETE VISIT TWO

The university and program are eager to proceed to visit two for substantial equivalency. They understand that they will need to mobilize additional financial and human resources to position themselves for a successful visit.

ACKNOWLEDGMENTS

I wish to acknowledge and thank the program faculty and leadership for their gracious hospitality. The visit was well organized, efficient in the way that a full range of issues were addressed in a short period of time, and questions were answered candidly and fully. It was a special privilege to meet His Excellency Mr. Abdulaziz Altuwaijri (the Chair of the Board of Trustees). The term “visionary” is perhaps overused, but it is appropriate in the context of his initiative in founding, nurturing, and advancing Dar Al Uloom University. As the only architecture program in the Kingdom that educates young women and men simultaneously, in a facility with equal resources directed toward both genders, DAR has already distinguished itself in important ways. The Rector is an excellent academic leader and genuinely engaged in the development of the new program in architecture.

I would like to offer special thanks to the leadership team of the architecture program: Dean Dr. Ayman Almusharaf, Vice-Dean for Quality and Development Dr. Nada Alnafea, Architecture Department Chair Dr. Margarita Cardenas, and Chair of the Accreditation Committee Dr. Elsayed Amer. These two men and two women worked individually and collectively to create an effective and enjoyable visit.

Kenneth Schwartz, FAIA

Attachments: Visit One Itinerary
DAU Institutional Overview

31 July 2014

Prof. Abdullah S. Almudimigh
Rector
Dar Al Uloom University
Riyadh
Saudi Arabia

Sent via electronic mail

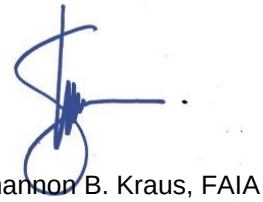
Dear Prof. Almudimigh:

At the July 2014 meeting of its board of directors, the National Architectural Accrediting Board voted to accept the report from visit one regarding the substantial equivalency application for the Bachelor of Architecture program at Dar Al Uloom University, College of Architectural Engineering and Digital Design.

Visit two will tentatively be scheduled for 2015. The team for visit two will consist of two people: one practitioner and one educator. The NAAB must receive the Architecture Program Report for visit two at least 120 days before the visit. Janet Rumbarger (jrumbarger@naab.org) will work with the program to coordinate arrangements for this visit.

On behalf of the NAAB directors and staff, I want to express how pleased we are that the university is moving forward with this program. The NAAB looks forward to continuing to build this relationship with Dar Al Uloom.

Sincerely,



Shannon B. Kraus, FAIA
President-elect

cc: Dr. Ayman M. Almusharaf
Dr. Nada A. Al Nafea
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