

# Comparative analysis of architectural education standards across the world

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**ABSTRACT:** A study performed by International Union of Architects showed that 78 countries across the world have their architectural education standards regulated by an authority (often governmental) (COAC 2005). Considering the fact that architects often practice in countries they have not received their education from, it is necessary that a standard architectural education curriculum be developed across the world. To do so, it is very important to compare the education standards across all the countries and develop a baseline understanding.

This paper provides a comparison among the architectural educational standards across the world. Information regarding the regulatory bodies monitoring the educational system was gathered from the study performed by International Union of Architects in 2005 (UIA, 2014). Further, the architectural education standards of the different governing regulatory bodies were obtained from their respective websites. The study looked into the architectural education requirements of all the 78 countries.

While results indicated that core requirements for architectural education showed high variation across countries, the areas of emphasis of the core requirements could be broadly categorized as design theory, technical systems, design documentation, and professional practice.

**KEYWORDS:** Architectural Education, Education Standards, International Union of Architects

## INTRODUCTION

As defined by International Union of Architects, an architect is “a person who is professionally and academically qualified and generally registered/licensed/certified to practice architecture in the jurisdiction in which he or she practices and is responsible for advocating the fair and sustainable development, welfare, and the cultural expression of society’s habitat in terms of space, forms, and historical context”.

In the context of today’s global change, architects are no longer confined to the borders of their own countries when providing services. With the rise of open economies in Eastern Europe, India, and China the international borders have been broken and international practice is becoming a norm for the architects. Architects are found creating master pieces around the world either practicing from their home country and collaborating with foreign fellow architects or sometimes opening offices abroad. Several examples of famous architectural master pieces around the world have been designed by architects from another nation such as Burj Khalifa in Dubai designed by American architectural and engineering firm Skidmore, Owings and Merrill LLP; Guggenheim Museum in Bilbao designed by Canadian-American architect Frank Gehry; etc. Considering the fact that architects practice in countries they have not received education from, it is necessary that a standard architectural education curriculum be developed across the world. To do so, it is very important to compare the education standards across all the countries and develop a baseline understanding of the different education systems.

To take an initial step in that direction, the authors attempted to conduct a comparative analysis of the architectural education standard of the different nations across the world.

## 1.0 BACKGROUND & PROBLEM STATEMENT

### 1.1. What is Architecture?

Architecture is a collective process of planning, designing and constructing structure or buildings. As defined by Steven Holl, the principal architect for Steven Holl Architects

“While artists work from the real to the abstract, architects must work from the abstract to the real. While art may legitimize itself as an object or an event, architecture dissolves into a blur of buildings. Architecture, under all of its constraints of engineering safety, function, climate responsibility and economy, sometimes transcends to inspire us with ideas in space and light—qualities achieved in the abstract”(Cruz 2013).

George Hersey broadened the scope of architecture profession even further through his definition when he included on only what 'we' built, but also much else besides –anthills, beehives, various body parts and some molecules (Hersey 2001).

## 1.2. Origin of the Profession

Architecture has not always been the same profession as it is today. In industrial world that we live in today every object is design by someone specially trained to do just that. Thus the name of architecture as a profession gained its identity as professionals who are experts in planning, designing, and constructing buildings or structures. As mentioned by Lawson in his book 'How designers think', vernacular process of designing is very closely associated with the concept of just making (Lawson 2006). He further explains the statement with the example of Eskimos who do not require an architect to build his igloo. The development in civilization and the need for more complex structures warranted the need for individual who are experts in the field, thus giving a separate status and identity to the profession of architecture. As early as in 1791 there was an 'Architects Club' in United Kingdom and later several other Architectural Societies were established. By 1834 the Institute of British Architects was founded which was no longer just a club or a society but rather an organization of like-minded people with an aspiration to raise, control and unify standards of practice.

The process of professionalism eventually led to a situation where the need for legally protecting the body of architects became inevitable. This body of professionals also started gaining more respect and eventually became socially respected exclusive elite (Lawson 2006). Thus it led to a need for higher standard of education to protect the profession.

## 1.3. History of Architectural Education

Architectural education that we are aware of today is a relatively recent phenomenon. Since historic times architectural education has relied on the process of transmission of knowledge and information from the masters to pupils. In the early nineteenth century, the French added a new outlook in the field of architectural education with the formation of schools to train architects, the École des Beaux Arts (Stevens 2001). Throughout the next century the field of architectural education slowly got embedded in the higher education systems. The history of architectural education can be mapped as a progressive movement of knowledge transfer from the workplace into the College or University studios. This movement has been interpreted as a series of political conspiracies in a study performed to interpret the history of architectural education with the Prince of Wales Institute of Architecture (Crimson and Lubbock 1994).

Over the years the architectural education system evolved with four distinctly different but overlapping systems. The French introduced the concept of organized formal architectural education system, followed by Germans who introduced the concept of research in the field of architectural teaching, and United States took the lead to synthesis the two in a University setting with an overlaying concept of apprenticeship (popularly known as internship) inherited from United Kingdom (Weatherhead 1941). This prompted the need for more structured architectural education standards across the world.

## 2.0. RESEARCH GOAL, OBJECTIVES & METHOD

In an attempt to have a better understanding of the architectural education systems across the world, this study aims to perform a comparative analysis of the education standards of 78 countries. This is a qualitative study adopting the method of content analysis of the education standard information of 78 countries as available on their respective websites.

### 2.1 Data Source

The strategy used for this systematic review was an extensive search of the websites of different governing regulatory bodies of architectural education in the different countries around the globe. Further the publications and databases of organizations focusing on architectural education systems across the world such as 'International Union of Architects', 'Royal Institute of British Architects' etc. were reviewed. Several published articles on architectural education were also reviewed through databases such as 'Avery', 'Academic Search Premier', 'Google Scholar' etc. The key words entered for this search were 'architectural education', 'architecture education and practice', 'architecture curriculum', and 'design education'. In this process various design and educational journals (e.g., Design Studies, Journal of Architectural Education, Architectural Record etc.) were consulted. Further, reference lists of the articles were reviewed to locate additional published materials. This process was repeated till saturation.

### 2.2 Data Extraction

Using the method of content analysis quantitative data on several variables like number of architects, number of architecture students, duration of architectural education, requirement of and duration of internship, requirement for registration to practice, and the requirement of professional examination for

registration were extracted. Content analysis was also used to collect data on type of educational standards, type of courses, and focus areas of the education system from the websites of the governing organizations of different countries.

### 2.3 Data Synthesis

Data was synthesized to compare the architectural education standards of different countries across the globe. The template used for this synthesis was based on Guidelines for Critical Review Form for - Qualitative studies developed by the McMaster University Occupational Therapy Evidence-Based Practice Research Group (Law et al. 1998) .

### 3.0 FINDINGS & DISCUSSION

Architectural education system assists to maintain a certain standard of knowledge and design ability among the architectural students and the graduates. It includes familiarity with the technical systems, consideration of health, safety, ecological balance, and the cultural, intellectual, historical, social, economic, and environmental context for architecture.

#### 3.1 Architectural Education Statistics

Architecture is taught as part of University education in 127 countries around the world. United States has the maximum number of Universities with architectural programs, followed by United Kingdom, Japan, Germany, Brazil, India, China, South Korea, and many more as represented in Appendix 1 & 2 combined. This finding is totally in contrast to the number of architecture students registered in each of the countries who responded to the survey conducted by Col·legi d'Arquitectes de Catalunya (COAC 2005). Japan has the highest number of students enrolled in architecture program followed by Germany, United States, China, Korea, Nigeria, Portugal and others. Japan also has the highest number of registered architects followed by Italy, United States, Germany, China, and United Kingdom.

#### 3.2 Education Standards

According to a survey conducted by Col·legi d'Arquitectes de Catalunya(COAC 2005) 78 countries out of the 91 countries who responded to the survey, have regulating authorities maintaining architectural education standards in comparison to 2 countries who have architectural education system but no regulating organization monitoring the standards and 6 other countries who donot have any formal architectural education system. Appendix 1 provides information on the architectural education system of the 80 countries who responded to majority of the information requested in the survey.

Majority of the 78 countries have one central organization regulating the education standard as compared to countries like United States, United Kingdom, India, Japan, Pakistan, Philippines, Singapore, Thailand, Belgium, Denmark, France, Germany, Italy, Canada, Brazil, and New Zealand. For most of the above mentioned countries with more than one governing body, the responsibility of the organizations are well laid out, where if one organization is focusing on the education system, then other organization is geared towards the policies and practices of the profession. Table 1 below provides a list of the regulating organization of several countries.

**Table 1:** List of professional organization.

Country	Name of Organization	
Ethiopia	Association of Ethiopian Architects	
Kenya	Architectural Association of Kenya	
Nigeria	Nigerian Institute of Architects	
Senegal	Order of Architects of Senegal	
South Africa	South African Institute of Architects	
Zambia	Zambia Institute of Architects	
Zimbabwe	Institute of Architects of Zimbabwe	
Bangladesh	Institute of Architects Bangladesh	
Hong Kong	Hong Kong Institute of Architects	
India	Indian Institute of Architects	Council of Architecture
Indonesia	Ikatan Arsitek Indonesia	
Japan	Japan Federation of Architects Associations Japan Association of Architectural Firms	Architectural Institute of Japan Japan Institute of Architects
Malaysia	Board of Architects Malaysia	
Pakistan	Pakistan Council of Architects and Town Planners	Institute of Architects Pakistan
Philippines	Philippine Institute of Architects	United Architects of the Philippines
Singapore	Singapore Institute of Architects	Board of Architects Singapore
Sri Lanka	Sri Lanka Institute of Architects	
Thailand	Association of Siamese Architects	Architect Council of Thailand
Austria	Bundeskammer der Architekten und Ingenieurkonsulenten	
Belgium	Fédération Royale des Sociétés d'Architectes de Belgique Conseil National de l'Ordre des Architectes	Nationaal Architecten Verbond
Bulgaria	The Chamber of Architects	Union of Architects in Bulgaria

Croatia	Hrvatska Komora Arhitekata i Inženjera u Graditeljstvu	Udruženje Hrvatskih Arhitekata
Cyprus	Cyprus Architects Association	
Czech Republic	Ceská Komora Architektu	
Denmark	Architects' Association of Denmark (Akademisk arkitektforening)	Praktiserende Arkitekters Ansatte Arkitekters Rad
Estonia	Eesti Arhitektide Liit	
Finland	Suomen Arkkitehtiliitto SAFA	
France	Conseil National de l'Ordre des Architectes	Syndicat de l'Architecture
Germany	Vereinigung Freischaffender Architekten Deutschlands	Bund Deutscher Architekten
Greece	Association of Greek Architects	Technical Chamber of Greece
Hungary	Magyar Építészek Szövetsége	
Ireland	The Royal Institute of the Architects of Ireland	
Iceland	Arkitektafélag Islands	
Italy	ALA Assoarchitetti - Associazione Liberi Architetti	Consiglio Nazionale degli Architetti
Latvia	Latvian Union of Architects	
Liechtenstein	Liechtensteinische Ingenieur-und Architektenvereinigung	
Lithuania	Lietuvos Architektu Sajunga	
Luxembourg	Ordre des Architectes et des Ingénieurs-Conseils de Luxembourg	
Macedonia	Chamber of licensed architects and engineers of Macedoni	Association of Architects of Macedonia
Malta	Kamra Tal – Periti	
Norway	Norske Arkitekters Landforbund	
Poland	Stowarzyszenie Architektów Polskich	
Portugal	Ordem dos Arquitectos	
Romania	Ordinul Arhitecților din România	
Slovakia	Slovenská Komora Architectov	
Slovenia	Inženirska Zbornica Slovenije	
Spain	Consejo Superior de los Colegios de Arquitectos de España	
Sweden	Svenska Arkitekters Riksförbund	
Netherlands	Bond van Nederlandse Architecten	
Turkey	Chamber of Architects of Turkey	
UK	Royal Institute of British Architects	
Canada	Royal Architectural Institute of Canada	
US	National Architectural Accrediting Board	American Institute of Architects
Brazil	CAU - Architecture and Urbanism Council	IAB - Brazilian Architects Institute-
Costa Rica	Colegio de Arquitectos de Costa Rica	
Australia	Australian Institute of Architects	
New Zealand	New Zealand Institute of Architects	

### 3.3 Duration of Education

Further the education standards of the 78 countries were reviewed to identify the differences in their approaches. The duration of education varied from three years to six years. Countries with three years of architecture education such as Zimbabwe, Serbia & Montenegro, Belgium, United Kingdom are always followed with an extra two years of Masters professional degree. Majority of the countries has a requirement of a minimum of five years. For countries like United States and Canada the year limits are variable and it is more regulated by the number of courses the students are required to complete. Complete information on the duration of education of the different countries across the world is available in Appendix 1.

### 3.4 Internship

The scope and availability of internship and its requirement and duration during the course of education varied greatly among the countries. 16 countries that included Turkey, Netherlands, Mexico, Macedonia, Greece, Georgia, France, Finland, Spain, Ecuador, Costa Rica, Belarus, Brazil, Bolivia, Benin, and Argentina do not have opportunity for Internship as compared to 7 countries such as Armenia, Czech Republic, Egypt, Lithuania, Singapore, Slovenia and South Africa, where internship is option but is not required as part of their architectural education. For countries where internship is required as part of the curriculum, the duration of the internship varies greatly (from a minimum of six months of internship required in India to five years required in Mali). Appendix 1 provides more detailed information about the architecture internship opportunity and requirement for all the 78 countries.

### 3.5 Education Structure

A review of the several architectural education standards revealed that course requirements vary greatly from art and design focus to more technical aspects as building science and survey. The section below discusses the education standards of different countries:

#### 3.5.1 Royal Institute of British Architects

The architectural education standard requirement of Royal Institute of British Architects (RIBA) mandates anybody qualifying as an architect to have completed at least five years of University education and

completed a minimum of two years of practical experience. The typical route for qualification includes the completion of part 1 through part 3, where part 1 is the completion of three years of fulltime undergraduate degree and gaining a year of practical experience; part 2 is the completion of two years of fulltime B.Arch or M.Arch degree followed by a 24 months practical experience; and finally part 3 is the completion of examination in professional practice and management to become a registered architect.

Under the Directive 2005/36/EC of the European Parliament, on the recognition of professional qualifications as an architect from a Europe Union (EU) country, architects are able to register and practice in of the 26 member countries of the EU. The entire 26 EU member countries follows the same architectural education requirement as RIBA with slight variation in their minimum requirement of practical experience as shown in Table 2.

**Table 2:** Architectural registration requirement of european nations.

No.	Countries	Requirement	Registration Requirement
1	Austria	Degree & 3 years prof. experience	Registration in Home country
2	Belgium	Degree & 2 years prof. experience	Registration in Home country
3	Bulgaria	Degree	
4	Cyprus	Degree	Proof legal practice in Home country
5	Czech Republic	Degree & Exam	Registration in Home country
6	Denmark	A qualified Architect from any EU country.	
7	Estonia	Degree & Exam	Registration in Home country
8	Finland	Any foreign Architect	
9	France	Degree & registered under RIBA	
10	Germany	Degree & 2-3 years of prof. experience	Registration in Home country
11	Greece	Degree	Registration in Home country
12	Hungary	Degree & Exam	Registration in Home country
13	Ireland	Registered under Royal Institute Architecture of Ireland (RIAI)	
14	Italy	Degree & 3 years prof. experience	Registration in Home country
15	Latvia	Degree & prof. experience	
16	Lithuania	Degree	Registration in Home country
17	Luxembourg	Degree & 1 years prof. experience	Registration in Home country
18	Malta	Degree & prof. experience	Registration in Home country
19	Netherland	Anyone can practice, but to register degree from and EU country required	
20	Poland	Degree & prof. experience	Registration in Home country
21	Portugal	Degree & 2 years prof. experience	Registration in Home country
22	Romania	Degree & prof. experience	Registration in Home country
23	Slovakia	Degree & 5 years prof. experience & Exam	
24	Slovenia	Foreign architects not allowed to practice	
25	Spain	Registered in any EU countries	Registration in Home country
26	Sweden	Registration not required (not regulated by law)	

### 3.5.2 National Architectural Accrediting Board

National Architectural Accrediting Board (NAAB) is the organization responsible for the development of standards of architectural education in the United States and procedures to verify that each accredited architectural program meets the set standards. The quote below from 1940 Founding Agreement of NAAB provides a brief description about the goal of the organization from its origin.

“The.... societies creating this accrediting board, here record their intent not to create conditions, nor to have conditions created, that will tend towards standardization of educational philosophies and practices, but rather to create and maintain conditions that will encourage the development of practices suited to the condition which are special to the individual school. The accrediting board must be guided by this intent. (NAAB 2014)”

According to the standards set forth by NAAB each graduates from an accredited program are required to possess knowledge and skill in certain predefined areas listed below in Table 3.

**Table 3:** Required knowledge and skill of graduates from NAAB accredited programs.

Realm	Skills required
Realm A: Critical Thinking and Representation	A.1 Professional Communication Skills
	A.2 Design Thinking Skills

	A.3 Investigate Skills
	A.4 Architectural Design Skills
	A.5 Ordering Systems
	A.6 Use of Precedents
	A. 7 History and Global Culture
	A. 8 Cultural Diversity and Social Equity
Realm B: Building Practices, Technical Skills, and Knowledge	B. 1 Pre-Design
	B. 2 Site Design
	B. 3 Codes and Regulations
	B.4 Technical Documentation
	B.5 Structural Systems
	B.6 Environmental Systems
	B.7 Building Envelope Systems and Assemblies
	B.8 Building Materials and Assemblies
	B.9 Building Service Systems
	B.10 Financial Considerations
Realm C: Integrated Architectural Solutions	C.1 Research
	C.2 Integrated Evaluations and Decision-Making Design Process
	C.3 Integrative Design
Realm D: Professional Practice	D1. Stakeholder Roles in Architecture
	D.2 Project Management
	D.3 Business Practices
	D.4 Legal Responsibilities
	D.5 Professional Conduct

### 3.5.2 The Royal Institute of the Architects of Ireland

Royal Institute of Architects of Ireland (RIAI) founded in 1839 is the regulatory and support body for architects in Ireland (Graby 1989). RIAI is responsible for regulating the education and practice of architectural profession in Ireland, besides maintaining the register of architects. RIAI has a set of 11 standards which describes the knowledge, skill and competence required for independent practice as an architect in Ireland. Indicator of each standards are described in the form of manageable and clearly defined requirements that are recognisably related to the realities of architectural practice. The indicators outline the specific areas in which a candidate is expected to demonstrate expertise, and the level of that expertise. Please refer to table 4 below for more information about the 11 standards.

**Table 4:** Architectural education standards by Royal Institute of the Architects of Ireland.

Reference	Standards
Article 46.1 (a)	Ability to create architectural designs that satisfy both aesthetic and technical requirements.
Article 46.1 (b)	Adequate knowledge of the history and theories of architecture and the related arts, technologies and human sciences.
Article 46.1 (c)	Knowledge of the fine arts as an influence on the quality of architectural design.
Article 46.1 (d)	Adequate knowledge of urban design, planning and the skills involved in the planning process.
Article 46.1 (e)	Understanding of the relationship between people and buildings, and between buildings and their environment, and of the need to relate buildings and the spaces between them to human needs and scale.
Article 46.1 (f)	Understanding of the profession of architecture and the role of the architect in society, in particular in preparing briefs that take account of social factors.
Article 46.1 (g)	Understanding of the methods of investigation and preparation of the brief for a design project.
Article 46.1 (h)	Understanding of the structural design, constructional and engineering problems associated with building design.
Article 46.1 (i)	Adequate knowledge of physical problems and technologies and of the function of buildings so as to provide them with internal conditions of comfort and protection against the climate.
Article 46.1 (j)	The necessary design skills to meet building users' requirements within the constraints imposed by cost factors and building regulations.
Article 46.1 (k)	Adequate knowledge of the industries, organisations, regulations and procedures involved in translating design concepts into buildings and integrating plans into overall planning.

### 3.5.3 Australian Institute of Architects

The Australian Institute of Architects founded in 1930, is the professional body for architects in Australia to provide professional support and advice for architectural community and advocate the value of architecture and architects. In addition the professional body is also responsible for setting standards for architectural education programs along with the Architects Accreditation Council of Australia (AACA) and Architect Registration Boards in each state and territory. According to the educations standards set forth by the above mentioned professional bodies, graduates exiting from an undergraduate program shall satisfy the following seven criteria:

1. Design Studies and Design Integration: This includes an understanding of the design theory and process followed by the ability to gather information, apply analysis and critical judgement.

2. Documentation and Technical Studies, which includes understanding building systems, and materials, and construction techniques.
3. History and Theory studies which includes awareness of philosophical, cultural and political movements as it relates to art and architecture, understanding history and theory of Western, non-western, regional and indigenous architecture, and the ability to inform action through knowledge of historical and cultural precedents in architecture
4. Practice and Project Management, and Implementation and User Studies including the process of awareness and understanding of the conventional building project cycle and the roles and responsibilities of the architects and other participants
5. Environmental Studies that focus on awareness of social and cultural dimensions of place, and awareness and understanding the concepts and issues of ecological sustainability.
6. Communication Skill which includes understanding about the growing theory of representation and how communication methods are integrally tied to methods and outcomes, and the ability to communicate ideas through the exercise of skills of collaboration, speaking, writing, drawing, modelling and evaluation,
7. Elective courses which can include but not limited to the awareness of the broader cultural context in which architecture is practiced, understanding of the specializations associated with the discipline of architecture and expand intellectual horizons beyond the core competency requirements of the architecture program.

#### 3.5.4 Canadian Architectural Certification Board

In Canada architects are required to meet three common requirements for registration: education, professional experience, and examination. The education requirement consists of the B.Arch and M.Arch degree from a program certified by Canadian Architectural Certification Board (CACB). CACB was established in 1976 to set forth guidelines to certify the academic qualifications of individuals holding a professional degree/diploma in architecture who intended to apply for registration. The CACB degree equivalent requires 160 semester hours grouped into the following six subject areas:

1. General Education and Electives: This section refers to a minimum of 32 semester hours of credit in English/French Composition, Humanities, Social Science, Mathematics, and Natural Science.
2. History and Human Behavior: It requires at least 12 semester hours of history or architecture focusing on the study of construction by which human needs have been satisfied and human aspiration have been met, and six semester hours on human behavior which relates to the characteristics of individual and groups and its relationship to the physical environment in which they perform.
3. Environment: A minimum of three semester hours on environmental studies, which is defined as the basic principles of ecology as well as the actions with respect to environmental and resource conservation in architecture.
4. Design and Graphic Communication: A minimum of 50 credit hours of building design in a four level design studio sequence is required as part of the CACB requirement checklist. The design studio sequence is required to cover information from basic design within a non-building design context and spatial analysis, to simple projects with emphasis on user space study, and further to a more in depth total synthesis of a complex project and its related building systems.
5. Technical Systems: A minimum of 24 semester hours are required to be completed in the areas of structure systems, environmental control systems and construction materials and assemblies.
6. Finally six semester hours are required about the knowledge of profession which includes the legal and administrative context of architectural practice.

#### 3.5.5 Council of Architecture, India

Unlike any other country discussed earlier, Council of Architecture of India requires all architectural students to qualify in the aptitude test in architecture before admission in an accredited institution. The aptitude test includes a section of aesthetic sensitivity and a section of drawing and sketching. The aesthetic sensitivity is to evaluate candidate's perception, imagination and observation, creativity and communication, and architectural awareness. The drawing aptitude is a test of the candidates (i) ability to sketch a given object proportionately and rendering with shade and shadow in visually appealing manner; (ii) sense of perspective drawing; and (iii) ability to create visual harmony using colours in given composition.

After admission into the architectural program the council requires all individuals to complete certain number of hours on the 18 selected topics in stage one and seven topics in stage two as shown in Table 5. Architectural education is broken into two phases where phase one is where students are introduced to the different topics and in phase two they apply that information in more complex design projects. The two phases are separated by a compulsory internship of six months to a year.

**Table 5:** Architectural education standards by Council of Architecture, India.

	Topics	Hours
<b>PHASE I</b>		
1	Architectural Design	540
2	Architectural Graphics Skills – Manual and Computer	360
3	Building Construction Technology	306
4	Structural Design and Systems	288
5	Basic Design and Visual Arts	180
6	History of Architecture, Art and Culture	126
7	Building Services and Equipments	90
8	Workshop Practice and Site Exposure	90
9	Building Materials and Sciences	90
10	Surveying and Leveling	36
11	Estimation, Costing and Specifications writing	72
12	Climatology, Environmental Studies and Landscape	63
13	Humanities	30
14	Human Settlements and Vernacular Architecture	30
15	Building Bye Laws and Codes of Practices	30
16	Theory of Design	63
17	Computer Applications in Architecture (Non-Graphic)	36
<b>PHASE II</b>		
1	Project (Thesis)	288
2	Architectural Design	216
3	Building Construction and Materials	108
4	Advanced Services	36
5	Advanced Structural Design and Systems	36
6	Professional practice	72
7	Research Skills and Project introduction	36
8	4 Electives from the sub topics: Housing, Urban Design, Interior Design, Construction Management, Landscape Design, Urban and Regional Planning, Architectural Conservation, Disaster Management, Architectural Journalism, Theatre/Film Set Design, Expert Systems Advanced Computing, Marketing Skills, Building Systems Integration, Visual Communication, Sustainable Architecture, Energy Conscious Architecture, Intelligent Buildings, Modular Coordination, Art in Architecture, & Environmental Studies	144

## CONCLUSION

The goal of the study was comparing educational standards of architectural programs across the world. The goal was achieved through extensive search of the websites of different governing regulatory bodies of architectural education in the different countries around the globe and databases of organizations focusing on architectural education systems across the world. While results indicated that core requirements for architectural education showed high variation across countries, the areas of emphasis of the core requirements could be broadly categorized as design theory, technical systems, design documentation and professional practice.

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**Appendix 1 - Architectural Education Standards and Requirements of Various Nations**

Country	No. of Archs.	Population	No. of Arch School	No. of Arch Student	Presence of Edu. Standard	Arch. Edu. Dur.	Internship Option	Mandatory	Internship Dur.
Argentina	42,000	41,803,125	31	44	Y	6	Y	N	3
Armenia	1,200	2,983,990	2	250	Y		N	NA	
Australia	11,605	23,630,169	23	5,486	Y	6	N	NA	
Austria	3,322	8,396,760	8		Y	5	Y	Y	3
Bangladesh	1,181	158,512,570	4	900	Y	5	Y	Y	2
Belarus		9,307,609	5		Y	5	Y	Y	2
Belgium	11,500	11,144,420	26		Y	5	Y	Y	2
Benin	107	8,519,000	1		Y		Y	Y	
Bolivia	5,265	10,847,664	3	1,500	Y	6	N	NA	
Brazil	80,000	202,033,670	83	8,500	Y	5	N	NA	
Bulgaria	4,178	7,167,998	2		Y	5	N	NA	
Canada	7,500	35,524,732	35		Y	5	N	NA	
Chile	9,000	17,772,871	21		Y		Y	Y	
China	36,000	1,393,783,836	77	32,000	Y		Y	Y	2
Colombia	33,300	48,929,706	21		Y		NA	NA	
Congo	70	69,360,118	1		N	5	Y	N	3
Costa Rica	2,003	4,937,755	8	2,145	Y		N		
Croatia	3,000	4,272,044	2	920	Y	5	Y	Y	2
Czech Republic	2,921	10,740,468	8	5,000	Y		N	NA	
Denmark	6,000	5,640,184	4		Y	5	Y	N	0.5
Ecuador	13,400	15,982,551	9	5,250	Y	5.5	Y	Y	3
Egypt	19,954	83,386,739	15	5,123	Y	variable	Y	Y	variable
Estonia	700	1,283,771	2	105	Y		N	NA	
Finland	3,500	5,443,497	9	1,600	Y	5	N	NA	
France	26,964	64,641,279	44	19,000	Y	BA 3 MA 2	Y	Y	5
Georgia	2,500	4,322,842	2	500	Y		Y	Y	2
Germany	50,000	82,652,256	92	41,759	Y	BA 5 +exam	N	Y	3
Greece	15,756	11,128,004	8	5,000	Y	BA 3 MA 2	N	NA	
Honduras	450	8,260,749	1	1,300	Y	6	N	NA	
Hong Kong	2,040	7,259,569	5	500	Y	5	N	NA	
Hungary	4,000	9,933,173	5	300	Y	5	N	NA	
Iceland	314	333,135	1		Y	BA3-4 MA 2	Y	Y	2
India	25,000	1,267,409,849	80		Y	5	Y	Y	0.5
Indonesia	6,000	252,812,245	10		Y	5	Y	Y	3
Iran	3,400	78,470,222	10	8,000	Y	5	Y	Y	2
Ireland	2,500	4,677,340	8	400	N		Y	Y	
Israel	7,000	7,822,107	6	1,000	Y	5	Y	Y	2
Italy	111,063	61,070,224	35		Y	5	Y	Y	3
Japan	307,558	126,999,808	95	80,000	Y		Y	Y	
Latvia	1,200	2,041,111	1		Y		Y	Y	
Lithuania	2,700	3,008,287	3	838	Y	5	Y	N	2
Luxembourg	600	536,761	1		N	4	Y	Y	1
Macedonia	3,000	2,108,434	1	500	Y	4	Y	Y	5
Malaysia	3,167	30,187,896	8	1,898	Y		Y	Y	
Malta	515	430,146	1	237	Y		Y	Y	
Moldova	670	4,295,000	1		Y		Y	Y	
Netherlands	8,350	16,802,463	15	2,280	Y	5	Y	Y	1
New Zealand	1,650	4,551,349	11	175	Y		Y	Y	1
Nigeria	4,500	178,516,904	21	10,000	Y	5	N	NA	
Norway	3,800	5,091,924	8		Y	5-6	Y	Y	2
Palestine	1,074	2,731,052	2	450	Y	BA 4 MA 2	Y	Y	2

Country	No. of Archs.	Population	No. of Arch School	No. of Arch Student	Presence of Edu. Standard	Arch. Edu. Dur.	Internship Option	Mandatory	Internship Dur.
Philippines	16,000	100,096,496	36		Y	5	N	NA	
Poland	13,500	38,220,543	16	6,770	Y		Y	Y	
Portugal	12,113	10,610,304	10	9,302	Y	5	Y	Y	2
Puerto Rico	1,027	3,683,601	5		Y		Y	Y	
Romania	5,500	21,640,168	7	615	Y		Y	Y	
Russia	11,883	142,467	33	5,000	Y		Y	Y	
Serbia & Montenegr	8,000	9,468,378	3	1,000	Y	5	Y	Y	1
Sierra Leone	20	6,205,382			N	3-6	Y	Y	2
Singapore	1,469	5,517,102	3	617	Y	4-5	Y	N	
Slovakia	2,500	5,454,154	2	1,400	Y	6	Y	Y	5
Slovenia	1,200	2,075,592	1	700	Y	4.5	Y	N	
Korea	10,140	49,512,026	66	12,000	N	5	Y	Y	3
South Africa	4,271	53,139,528	18	800	Y	5	Y	N	2
Spain	40,741	47,066,402	37		Y	4.5	Y	Y	2
Sri Lanka	485	21,445,775	1		Y	6	Y	Y	3
Sudan	800	38,764,090	1	1,300	Y		Y	Y	
Sweden	5,376	9,631,261	8	1,300	Y		N	NA	
Switzerland	5,330	8,157,896	15	3,000	Y		Y	Y	
Tanzania	171	50,757,459	2		Y	4	N	NA	
Trinidad & Tobago	100	1,344,235	1		No School		Y	Y	3
Tunisia	1,400	11,116,899	5		Y		Y	Y	
Turkey	29,655	75,837,020	45	5,000	Y		N		
Ukraine	7,100	44,941,303	17		Y	5	Y	Y	2
United States	102,000	322,583,006	397	36,300	Y	3-4 + 2	Y	Y	3
United Kingdom	30,399	63,489,234	187	10,000	Y	5	Y	Varies	3
Uzbekistan	1,099	29,324,920	3	550	Y		N		
Venezuela	13,000	30,851,343	28		Y		N		
Vietnam	8,500	92,547,959	6		Y	BA 3 MA 2	Y	Y	1
Zimbabwe	100	14,599,325			Y		Y	Y	

**Appendix 2** - Number of Architectural School in each individual Nation. This table only lists the countries not listed in Appendix 1.

	Country	No. of Arch Schools
1.	Albania	1
2.	Azerbaijan	2
3.	Bahrain	1
4.	Bhutan	1
5.	Bosnia Herzegovina	2
6.	Burma	1
7.	Burundi	1
8.	Cambodia	1
9.	Cape Verde	1
10.	Cuba	4
11.	Cyprus	4
12.	Dominican Republic	4
13.	El Salvador	8
14.	Ethiopia	3
15.	Ghana	1
16.	Guatemala	4
17.	Guyana	2
18.	Haiti	1
19.	Iraq	4
20.	Jamaica	2
21.	Jordan	4
22.	Kazakhstan	6
23.	Kuwait	1
24.	Kyrgyzstan	1

	Country	No. of Arch Schools
25.	Lebanon	6
26.	Liberia	1
27.	Libya	1
28.	Nepal	1
29.	Nicaragua	3
30.	North Korea	1
31.	Pakistan	8
32.	Panamá	3
33.	Papua New Guinea	2
34.	Paraguay	1
35.	Perú	9
36.	Saudi Arabia	6
37.	Somalia	1
38.	Swaziland	1
39.	Syria	4
40.	Tajikistan	1
41.	Thailand	11
42.	Togo	1
43.	Türkmenistan	2
44.	Uganda	2
45.	United Arab Emirates	10
46.	Uruguay	4
47.	Zambia	2