SUBJECT BENCHMARK STATEMENT

IN

ARCHITECTURE

Quality Assurance and Accreditation Council
University Grants Commission
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FOREWORD

The work in connection with the development of Subject Benchmark Statements was begun in August 2003 as a part of the overall quality assurance framework that supports academic standards and the furtherance and dissemination of good practice in Universities in Sri Lanka.

Subject Benchmark Statements will support and promote quality and standards by:

- Providing universities with a common and explicit reference point for internal and external programme approval and review;

- Guiding and promoting curriculum development, especially in new departments and new universities, and in other institutions of higher education;

- Evolving over time to take account of changes and innovations that reflect subject development and new expectations;

- Providing an authoritative and widely recognized statement of expectations of what is expected of a graduate in a specific (or designated) subject area in a form readily accessible to students, employers and others with a stake in higher education;

- Providing a clear and transparent reference point for External Examiners;

- Assisting international comparison and competitiveness of higher education awards and student achievement.

DEFINITIONS

Four key words used in the academic context are defined as below;

Awareness: Acquaintance with general concepts, topics, rules, methods or procedures without necessarily being able to paraphrase or summarize information.

Knowledge: Familiarity with specific information including facts, definitions, rules, methods, processes or settings without necessarily being able to see its fullest implications.

Understanding: Identification, assimilation and comprehension of information. Students can correctly paraphrase or summarize information and can relate it to other material, including its practical application.

Ability: Skill in relating specific information to the accomplishment of tasks. Students can correctly select information that is appropriate to a situation and apply it to the solution of a specific problem

SUBJECT BENCHMARK STATEMENT

ARCHITECTURE

1. INTRODUCTION

1.1. Subject Benchmark Statement

Benchmarking of academic standards is an essential component of quality assurance in the University system. Subject benchmark statements provide a means for the academic community to describe the nature and characteristics of programmes in a specific subject.

Subject benchmark statements are used for a variety of purposes. Primarily they are important as they describe the nature of the subject area, the expected attributes and capabilities of award holders, and the minimum standards for the award of the degree

It provide:

- Academic staff and institutions with a framework for developing and specifying the intended learning outcomes of programmes;

- Institutions with a minimum standard for the award of a degree in a subject area;

- Peer reviewers with a point of reference, among others, for making judgments about the appropriateness of academic standards within institutions in pursuit of internal and external quality assurance;

- Professional and statutory bodies with academic and practitioner standards that should be expected of graduates.

Benchmarking academic standards may also provide information for:

- Students, employers and others about the range of provision in particular subject/discipline areas, the qualities developed in graduates, and the standards that would be expected of graduates in those areas;

- The public at large about the nature of higher education awards.

This Subject Benchmark Statement for Architecture has been undertaken as an activity of the Quality Assurance (QA) Project of CVCD/UGC by a subject benchmarking team drawn from Academics and practitioners of Architecture on behalf of the subject community.

This Benchmark statement refers to the Undergraduate level of attainment.

The statement is not a syllabus and is not intended to prescribe the time devoted to each component or the order in which the components are to be taught.

1.2. Nature and Extent of the Subject

The discipline of architecture draws on knowledge and skills from the human and physical sciences, the humanities, and the fine and applied arts. It addresses the accommodation of all human activity in all places under all conditions, understanding our place within differing physical, historical, cultural, social, political and virtual environments. Architecture proposes, forms, and transforms our built environment, and does so through an engagement with the spaces, buildings, cities and landscapes in which we live. Architectural education is therefore rich, varied and by definition interdisciplinary.

Design is the core activity of an architectural education. There is, however, no single, unified theory of design which is generally accepted. Indeed it is the contested nature of design as an activity that provokes debate, encourages diversity, and advances the subject. Nor is design a single category of activity. The relationship among design process, design programme and design projects raises issues of how projects can be developed, communicated, received, criticized and realized. It is the interaction of ideas, intentions and operations that gives the core of the subject area its distinctiveness, and allows teaching institutes the opportunity for diversity in their delivery of undergraduate courses. This is amplified by the other parts of the teaching programme to provide a broad education which supports design, and which invariably emphasize some subjects over others consonant with that school's (or even teaching group's) interpretation of design.

Students entering architecture courses have, in general, little or no experience of design or other key subjects. Many areas of study are thus being introduced for the first time. This has, however, many benefits. Students tend to come to architectural education from numerous backgrounds, bringing to the schools the very diversity of disciplines and modes of inquiry that an architecture course requires and imbues. Most people studying architecture at degree level do so with the intention of pursuing a route which will lead to professional accreditation, or to a career in a related field. Architectural education is a part of the construction industry, and along with architecture practice, has an important role to play in how this industry changes and develops. The knowledge, understanding and skills that an architecture education imparts is broad, holistic and of value in itself, as befits a distinct, academic discipline. Students with a recognized qualification in architecture may go on to work in a number of fields.

1.3 The study programme

The usual duration of an Architecture study program is five years of full time academic study to facilitate an enable an environment for the making of a professional architect, which needs two more years of professional experience to be admitted to the professional institute. The program aims “to inculcate ethically and professionally sound values and attitudes supportive of creativity in the design of the spatial environment and to enable the acquisition of acumen for professional teamwork and leadership in society in the sphere of the spatial environment”. Further it prepares a student to enter the profession as a chartered architect.

2. SUBJECT AIMS

The main aims of teaching the subject are:

- To create a well-accomplished, skilled and contended student with the right attitudes to face the challenges in achieving international excellence in design creativity, design innovation and design research, with national relevance;

- To develop in students a range of transferable skills that will be of value in employment and self-employment;

- To provide students with analytical skills and an ability to develop simplifying frameworks for studying the real world.

- To provide training within an intellectual, physical and social environment to achieve excellence in the relevant skills.

- To develop a student to achieve the status of a leading consultant and provider of advanced consultancy services to the state and the private sector;

- Contribute to the government policy making and national development of the built environment including higher/professional education in Sri Lanka;

In an academic institution, the educational mission of an Architecture program is to provide the students with a challenging and exciting learning experience aimed at producing competent persons, who are capable of entering the profession by addressing functional, socio-cultural, psychological and physiological needs of the man through built environment solutions and thus focusing on the built environment in all its aspects.

3. SUBJECT KNOWLEDGE AND UNDERSTANDING

Architecture requires inquiry and synthesis, and brings to bear a wide range of knowledge, understanding, abilities and skills. It involves a complex sequence of research, reflection, iteration and integration of specific subject based knowledge, with the aim of applying these to a design project. Architecture draws together conceptual, contextual, ethical and material considerations in the realization of space or form.

3.1 Subject-specific knowledge, understanding, abilities and skills

The subject specific knowledge, understanding and skills attained during an architectural education can be grouped into the following interrelated five headings:

Design

The design project will be learned by an understanding of the ways that architectural histories and theories, and the existing physical and cultural context, can enlighten design processes, programmes and proposals.

The student will have a knowledge and understanding of the principles of building technologies, including the application of structure, construction, materials and environmental design in relation to human needs.

The student will understand and appreciate the impact on design of regulatory frameworks, the needs and aspirations of clients or users, the roles of those who collaborate in the making process and the impact of the design upon the wider community.

The student will understand and appreciate the importance of communication and dialogue in the development and discussion of design ideas.

Design-specific skills are:

- an ability to conceptualize, investigate and develop the design of three-dimensional objects and spaces
- an ability to create architectural designs that integrate social, aesthetic and technical requirements.
- an ability to conceive architectural designs on a specific site within the broader landscape and context of urban planning by applying a contextual approach to design.
- an ability to research, formulate and respond to programmes or briefs that are appropriate to specific contexts and circumstances
- an ability to work in an interdisciplinary environment and collaborate with others

Cultural context

The cultural context of architecture is centered on the histories and theories of architecture and urban design, the history of ideas, and the related disciplines of art, cultural studies and landscape studies.

The student will recognize and appreciate the influences on the contemporary built environment of individual buildings, the design of cities, past and present societies and wider, global issues.

Culture-specific skills are:

- an ability to form considered judgments about the spatial, aesthetic, technical and social qualities of a design within the scope and scale of a wider environment
- an ability to reflect upon and relate their ideas to a design and to the work of others.

Environments and technologies

Architectural design requires a knowledge and understanding of the theories and principles of environmental technologies, and an awareness of their impact upon human comfort, well-being and protection. It requires an understanding of the relationship of these to the climate, the development of a sustainable environment, and the impact that design decisions may have upon the natural world and its resources.

The processes of design demand knowledge and understanding of structural and constructional principles, the properties and meanings of materials, and the ways that these may inform and influence design decisions.

Similarly, design requires an appreciation of the impact of statutory instruments for health, safety and comfort, both during the construction and subsequent occupation of a project.

Environment/technology-specific skills are:

- an ability to produce designs that demonstrate the integrative relationship of structure, building materials and constructional elements within statutory requirements.
- an ability to produce designs that demonstrate an understanding of the integrative relationship between climate, service systems and energy supply
- an ability to exercise informed and reflective judgment in the development of sustainable design.

Communication

In order to develop design ideas, communicate them to others, listen and respond to feedback, whether in informal or formal groups, it is important for the student to have a knowledge and understanding of the breadth of graphic and modeling techniques within a wide range of media. It is also necessary to have the ability to select the appropriate medium, and to be proficient in verbal and graphic techniques.

Communication-specific skills are:

- an ability to understand the conventions of architectural representation.
- an ability to use a range of visual, written and verbal techniques in order to communicate architectural designs and ideas.
- an ability to select and use various media in order to communicate to the intended interest group
- an ability to select and use design using design-based software and multimedia applications
- an ability to listen and engage in informed dialogue

Professional Studies (management, practice and law)

Professional studies provide an appreciation of the issues and constituencies which influence the processes and delivery of design; for instance, the relationships of those in the construction, culture and other industries, and the ways that regulatory frameworks and systems relate to wider social and ethical concerns.

Professional-specific skills are:

- an ability to work collaboratively within an interdisciplinary environment
- an ability to respond to a broad constituency of interests and to the social and ethical concerns of the subject.

3.2 Transferable skills

As well as the above list of subject-specific knowledge, understanding, abilities and skills, an undergraduate course in architecture engenders a broad range of transferable skills. These include the ability to:

- communicate effectively with other people using visual, graphic, written and verbal means
- work autonomously in a self-directed manner, thereby developing the practices of reflection and of lifelong learning
- work in teams
- manage time and work to deadlines
- use digital and electronic communication techniques
- analyze problems, and use innovation, logical and lateral thinking in their solution
- be flexible and adaptable in the approach to and development of an issue, problem or opportunity.

4. TEACHING AND LEARNING STRATEGIES

The methods and contexts of learning in architectural education are distinguished by the central role of the design project, the specificity of the design process, the profusion of accepted design approaches, and the importance and variety of effective means of communication. Architectural education does employ the usual teaching processes of lectures and seminars, but it is at heart project-oriented. It balances the creative process with a critical awareness of more objective criteria in the development of a proposition. Each design outcome tends to be unique, non-repetitive and immanent in its conception and development.

Architecture students learn from the outset to synthesize a variety of information, approaches, interpretations, facts and disciplines, bringing them to bear on the design project. Students thus need to learn and retain knowledge and understanding from more conventionally academic disciplines that are linked to the humanities and to the physical and human sciences. However like design, the coursework in these areas is often investigative, speculative and creative in intent while developing core skills.

The Design Studio

The core activity of architectural design is taught through a combination of individual tutorials, group tutorials, semi-public and public presentations (known as project reviews or crits), and arrangements where students work and discuss things together formally and informally. The nature of the discussion might involve verbal, written or graphic means. Architecture schools typically refer to the process of design as occurring in a studio environment. However, configured physically, the studio will be the place where design tutorials take place and where students can display and discuss their work with others. It is their base, and its existence is a major contribution to the specific and intensive qualities of architectural education.

The Design Project

The time allowed for a design project can vary from a single day to an academic year. During the project, the student transforms a field of inquiry into a proposition or scheme.

The learning process is characterized by continual dialogue. Students learn from talking with each other and their tutors, and from the comments from other people invited to the project reviews. The most important learning experience comes from what is known in other disciplines as self-reflection, a skill central to the acquisition of all architectural knowledge and skills, and one that is consciously developed.

It is not possible or desirable here, to be prescriptive in describing the learning process in the design project. Methods and intentions can vary considerably. But there are characteristics common to all processes in schools of architecture. Firstly, the relationship between the desire and intention to form an outcome, and its full or partial realization, is exploratory and developmental. Secondly, students work predominantly with means which are abstracted from the intended final outcome. Thirdly, the learning and assessment processes mirror one another, and occur and develop concurrently. Through dialogue with oneself, with other students, with and among tutors, judgments concerning quality are reached by consensus.

Subject teaching / Theory lectures
Subject teaching is done in a conventional manner. However, it is more focused to use the acquired knowledge into the design and production process.

Subject teaching is broadly divided into four streams of specializations: (i) Environment in Architecture (ii) Technology in Architecture (iii) Society, Culture and History in Architecture (iv) Profession, Management and Law

Dissertations, report writing, tutorials and seminar based learning is a common method of acquiring knowledge which supplement the design development process.

A balanced selection of the following teaching and learning techniques can be used
- Lectures with audio-visual aids (traditional and interactive)
- Laboratory classes/Field work/Project work/Computer sessions
- Excursions and field visits
- Case studies
- Seminars/Discussions/Workshops/Tutorials
- Problem-based learning
- Self-directed study and set assignments
- Research papers
- Internet and library based resources.

In addition to more conventional methods of learning through lectures, seminars and tutorials, architectural education requires:
- Studio design work
- visual and verbal presentation of project work at pin-up reviews or crits
- preparation and assembly of a portfolio of work
- group project work
- short design projects and workshops (typically lasting between a day and a few weeks)
- comprehensive design project
- specialist subject tutorials
- visits to investigate and / or survey a site

- visits to experience and study historical and contemporary architecture and cities
- visits to buildings in the process of construction
- environmental investigations of design project work
- model-making
- the use of computer aided design and other software
- self-directed study

The above list is not intended to be prescriptive or exhaustive.

5. REVIEW OF WORK AND ASSESSMENT STRATEGIES

5.1 Assessment

The continual and consensual nature of the assessment process is distinctive to architectural education. It is a considerable part of the learning process. At the end of the time allowed for the design project, each student's work typically is reviewed in a pin-up session in front of an audience of fellow students, tutors and visiting critics from inside and beyond the institution. At these sessions, the student or group of students present their proposal to the audience, who then comment on and discuss the issues that it raises and the quality of the proposal. Critical commentary may be given to students in verbal, written and graphic forms. These project assessments are then reviewed by staff and external examiners, usually in the form of a design portfolio.

Other parts of the undergraduate architecture course are usually assessed through methods which are more standard to university disciplines, such as coursework, examinations, papers and project-based work.

5.2 Variety of Submissions

Architectural education requires many types of submission, which the student builds into a portfolio of work that demonstrates knowledge and skills across the range of the course. The types of submission include:

- review presentation of project work through graphic and three-dimensional means
- review presentation of project work through digital and electronic media
- portfolio presentation of drawings, digital work and other visual material
- three-dimensional artifacts, physical models and installations
- seminar presentations
- written examinations and coursework
- project-based work

6. MAINTAINING STANDARDS

It is recognized that programmes will achieve the goals set for standards in various ways. The achievement of the knowledge and skills described in this statement is usually monitored by such measures as:

- involvement of external examiners
- periodic updating of curriculum as required by the local professional institution. (ie. SLIA)
- periodic review and accreditation of teaching programme and facilities by local professional institution. (ie. SLIA)
- periodic review and accreditation of teaching programme and facilities by foreign professional institutions.
- periodic subject review by QAA council of the UGC.
- interaction between the course teachers and professional institutions.
- Involvement of the course teachers in the industry.
- Involvement of the course teachers in research and staff development.

7. STUDENTS ATTAINMENT AND BENCHMARK LEVEL

This section sets out the minimum achievement that a student would be expected to have demonstrated before they are awarded a qualification at undergraduate level in architecture and permitted to proceed to the professional examination. It is then followed by a brief description of what would be expected from a typical student. Each institution will have its own method of determining what constitutes appropriate evidence of a student's relative achievement. The external examiner system and the academic reviews established by the QAA will monitor adherence to these standards.

(a) Threshold Standard

The threshold standard for a student in architecture will be demonstrated through their performance under the following five headings:

Design

The student will demonstrate:

- an ability to produce a comprehensive architectural design
- an understanding of the ways that the analysis, research, development and preparation of an architectural programme or brief can inform design knowledge of architectural histories and theories, of physical and cultural contexts, and of the ways that they can inform design processes, programmes and proposals.
- knowledge and understanding of the principles of building technologies in relation to human needs
- an understanding of the impact on architectural design of regulatory frameworks, the needs and aspirations of clients and building users, and the requirements of the wider community.

Cultural Context

The student will demonstrate:

- knowledge and understanding of the histories and theories of architecture and contextual design, the history of ideas, and the related disciplines of art, cultural studies and landscape studies
- an appreciation of the influences on the contemporary built environment of individual buildings, the design of cities, past and present societies and wider global issues.

Environments and Technologies

The student will demonstrate:

- knowledge and understanding of the theories and principles of environmental technologies
- an awareness of the impact of environmental design, construction methods and architectural technology on human comfort, safety and well-being, and how these may inform and influence design decisions
- an understanding of the relationship of environmental design, construction methods and architectural technology to the climate, the development of a sustainable environment, and the impact that design decisions may have upon the natural world and its resources.
- knowledge and understanding of structural and constructional principles, the properties and meanings of materials, and the ways that they may inform and influence design decisions
- an appreciation of the impact on design of statutory instruments for health, safety and comfort, both during the construction and the occupation of a project.

Communication

The student will demonstrate:

- an ability to use a range of graphic and modeling techniques drawn from a variety of media
- an ability to communicate architectural ideas and designs through visual, written and verbal means

Professional Studies, Management and Law

The student will demonstrate:

- an appreciation of the issues which influence the processes and delivery of design.
- an understanding of the roles and relationships of those in the construction, culture and other industries
- knowledge of the ways that regulatory and economic frameworks and systems relate to wider social and ethical concerns

Typical Standard

On completion of the undergraduate course in architecture, the typical student will meet not only the threshold standards, but will also demonstrate an integration and understanding of the relationships among most of the specified headings. He or she will be expected to produce well-resolved design projects, as demonstrated through an articulate and coherent portfolio of work.

8. ANNEX1. MEMBERS OF THE BENCHMARK GROUP

Prof. Lal Balasuriya	University of Moratuwa
Mr. Indunil Seneviratne	University of Moratuwa
Prof. (Ms.) Chitra Wedikkara	University of Moratuwa
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