

Land Surveyors' Rules, 1985

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THE LAWS OF BARBADOS

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RULE

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Land Surveyors

Cap. 370.

LAND SURVEYORS' RULES, 19851985/111.
1993/56.

Authority: These rules were made on 15th May, 1985 by the Board, with the approval of the Minister, under section 15 of the *Land Surveyors' Act*.

Commencement: 18th July, 1985.

1. These Rules may be cited as the *Land Surveyors' Rules, 1985*. Short title.
2. In these Rules,
 - "articled student" means a person of the age of majority who, by virtue of articles of indenture, binds himself as a student to a land surveyor; and "studentship" shall be construed accordingly;
 - "articles of indenture" means the articles of indenture as contained in the *First Schedule*; First Schedule.
 - "attachment" means a period of service, not being studentship with the Lands and Surveys Department;
 - "Caricom Countries" means countries that are signatories to the Treaty Establishing the Caribbean Community and Common Market signed at Chaguaramas on 4th July, 1973; 1993/56.
 - "Chief Surveyor" means the Chief Surveyor, Lands and Surveys Department;
 - "examination fee" means the relevant fee prescribed in the *Fourth Schedule*; Fourth Schedule.
3. (1) Subject to paragraph (2), no person may be licensed to practise as a land surveyor under the Act unless
 - (a) he has
 - (i) for a period of not less than 2 years previously been an articled student with a land surveyor; and

Conditions for issue of licence.

(ii) completed a period of attachment of at least 1 year at the Lands and Surveys Department;

and during that period has made such progress as the Board considers satisfactory; and

(b) he has successfully completed the final examination set by the Board.

(2) A person who

(a) is pursuing a full-time course of training in land surveying at any institution approved by the Board shall not be required to be an articled student;

(b) is licensed to practise as a land surveyor in such Commonwealth Caribbean country as the Board with the approval of the Minister determines may be exempted by the Board from all examinations and studentship and attachment, and tests of professional competence in local law and practice for such time as the laws of that country give similar recognition in respect of a licence to practise as a land surveyor in Barbados; or

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(c) possesses

Second
Schedule.

(i) any of the qualifications specified in Part I of the *Second Schedule*; or

(ii) any qualification in land surveying from an institution approved by the Board

may be exempted from studentship or the examinations set by the Board.

(3) Notwithstanding paragraph (2)(b) and (c), the Board may require any person who possesses a qualification specified in Part I of the *Second Schedule* and has served at least 6 months attachment to take such test in local law and survey practice as the Board determines.

(4) A determination under sub-paragraph (2)(b) must be notified in the *Official Gazette*.

4. (1) No person may be admitted into articles of indenture as an articulated student unless he

Conditions for admission to articles of indenture.

(a) is of the age of majority;

(b) has obtained passes in

(i) English language, mathematics and 2 or more other subjects at the ordinary level of the General Certificate of Education; or

(ii) mathematics at the advanced level of the General Certificate of Education in addition to English language, and physics or geography at the ordinary level of the General Certificate of Education; or

(c) has attained a standard of education of which the Minister responsible for Education approves as being equivalent to that specified in paragraph (b).

(2) Where a person is admitted into articles of indenture pursuant to paragraph (1)(b)(i), he must, before being allowed to present himself for the first examination set by the Board, obtain a pass in mathematics at advanced level, and physics at the ordinary level, of the General Certificate of Education, or attain such standard in those subjects as the Minister responsible for Education approves as being equivalent to such passes.

5. (1) Subject to paragraph (2), no land surveyor may

Limit on articulated students.

(a) have more than 2 articulated students at any one time;

(b) accept any person as an articulated student unless that land surveyor has been in actual practice in Barbados as a land surveyor for a period of at least 3 years;

(c) accept any person as an articulated student after he retires from actual practice.

(2) The Chief Surveyor may accept one articulated student in respect of each land surveyor employed in the Lands and Surveys Department.

Certain service excluded from studentship.

6. Service performed by any person before he attains the age of majority or in contravention of rule 5 may not be applied in respect of a period of studentship.

Articles of indenture to be recorded. First Schedule.

7. Articles of indenture must be in the form set out in the *First Schedule*, and must be recorded in the Lands and Surveys Department within 6 months after they are executed and after such execution be kept open to inspection at the Lands and Surveys Department during normal office hours.

Transfer of articles of indenture and registration of transfer.

8. (1) Where a land surveyor

- (a) retires, dies or becomes of unsound mind;
- (b) remains outside Barbados for any period exceeding 6 months;
- (c) enters an agreement with an articulated student that the studentship should be terminated; or
- (d) for any reason ceases to practise as a land surveyor in Barbados,

the Chief Surveyor or any other land surveyor may, notwithstanding rule 5, receive a transfer of the articles of indenture respecting any student that is articulated to a land surveyor to whom this paragraph applies, and that student may continue his studentship with such land surveyor for the unexpired portion of his studentship.

(2) Any transfer made pursuant to paragraph (1) must, within 3 months of the transfer, be registered with the Chief Surveyor by the land surveyor making the transfer.

Register of articulated students.

9. The Chief Surveyor must keep a register of all articulated students according to the year of their indenture.

10. (1) The Chief Surveyor may not admit any person on attachment to the Lands and Surveys Department unless that person has

Conditions for attachment.

(a) completed the period of studentship specified in rule 3(1)(a); and

(b) passed the first examination set by the Board.

(2) Paragraph (1)(a) and (b) must not be applied to a person who has completed a full-time course of not less than 2 years duration in land surveying and has obtained a qualification specified in Part II of the *Second Schedule*.

11. (1) Subject to paragraph (2), the Board may appoint persons as it thinks fit to conduct examinations.

Appointment of examiners.

(2) No person may be appointed under paragraph (1) unless that person

(a) has had at least 5 years practical experience in Barbados as a land surveyor; and

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(b) has successfully completed a full-time course in land surveying of not less than 3 years duration.

(3) A person appointed under this rule shall be paid such fees by the Board as the Minister determines after consultation with the Board.

12. The examinations for qualification as a land surveyor shall be set on the basis of the syllabus set out in Parts I, II and III of the *Third Schedule*.

Examinations for land surveyor. Third Schedule.

13. (1) Examinations may be held during the month of July in each year, or at such other times as the Board determines.

Time of examinations.

(2) Supplemental examinations for persons referred in one subject, at the most recent examination, may be held by the Board in the month of January or at such other time as the Board determines.

14. The Board shall, at least 3 months before an examination is held, publish in one issue of the *Official Gazette* and in two consecutive issues of the local newspapers a notice in respect of the date, time and place of the examination.

Notice of examinations.

15. (1) A person who desires to present himself for the first examination must

- (a) notify the Board in writing of his desire;
- (b) produce a certificate of satisfactory service as an articled student; and
- (c) pay to the Accountant General the examination fee prescribed in the *Fourth Schedule* not later than the day before the examination.

Person presenting himself for examination to notify Board, etc.

Fourth Schedule.

(2) A student who has successfully completed the third year of a land surveying course at any institution approved by the Board is eligible to sit the first examination.

(3) A person who desires to present himself for the final examination must produce evidence

- (a) that he has paid to the Accountant General the appropriate examination fee prescribed in the *Fourth Schedule*;
- (b) that he has satisfactorily completed the first examination or has been exempted therefrom.

Fourth Schedule.

16. The Board may permit

- (a) an articled student to present himself for the first examination at any time after he completes his articleship; and
- (b) a person serving attachment to present himself for the final examination at any time after he completes 6 months of that attachment.

Articled student and person serving attachment to be permitted to take examination.

17. (1) A student who is unsuccessful at an examination may present himself again for that examination at any time if the year immediately preceding the examination is spent working in the

Failure of examination.

THE LAWS OF BARBADOS

field of land surveying or in such other field as the Board approves.

(2) Where a student obtains the aggregate pass mark in any examination (first or final) but fails in any one paper of such examination, the Board may grant a referral in that paper; but such a student may be required to re-sit the paper at the next examination set by the Board and must obtain the examination pass mark.

(3) A student who fails to obtain the examination pass mark must re-sit the entire examination.

Review of
examina-
tion papers.
Fourth
Schedule.

18. (1) A student may have his examination papers reviewed by the Board on payment to the Accountant General of the fee prescribed in the *Fourth Schedule*.

(2) The fee paid under paragraph (1) may be refunded at the discretion of the Board.

Register of
persons
issued
with
licences.

19. The Board must keep a register in which the following matters must be recorded:

- (a) the names, addresses and qualifications of all persons to whom licences have been issued under the Act;
- (b) the date on which each such licence was issued; and
- (c) the dates and details of any disciplinary measures taken against any person to whom a licence was issued.

Profes-
sional mis-
conduct.

20. (1) A land surveyor who

- (a) solicits employment;
- (b) signs a plan of a survey which was not carried out by him or under his supervision;
- (c) executes a survey carelessly or without sufficient check measurements;
- (d) fails to comply with any requisitions made by the Chief Surveyor in respect of any survey plan deposited for recording;
- (e) wilfully makes, in respect of any survey plan deposited by him for recording any records or calculations that are false;

- (f) conducts himself in such manner or carries on any business that in the opinion of the Board is calculated to bring the profession into disrepute;
- (g) receives payment in advance for work and fails to carry out such work within a reasonable period of time;
- (h) does work that in the opinion of the Board, is incompatible with the nature and practice of land surveying; or
- (i) contravenes or fails to comply with these rules,

is guilty of professional misconduct.

(2) Where a land surveyor

- (a) is found guilty by the Board of professional misconduct; or
- (b) is convicted by a court of a criminal offence, and found by the Board to be unfit to practise as a land surveyor,

the Board may recommend to the Minister that the surveyor's licence be suspended for a period not exceeding 3 years or cancelled.

(3) The Minister shall suspend the licence of any surveyor who has been declared bankrupt until such time as the receiving order is rescinded.

21. Where the Board proposes to carry out an inquiry in accordance with section 12(1) of the Act the Board shall give the land surveyor, against whom charges are made, 21 days written notice of

Notice of Inquiry.

- (a) the charges against him;
- (b) the nature and purpose of the inquiry;
- (c) his right to be represented by an attorney-at-law or other person;
- (d) the time and place of the inquiry.

FIRST SCHEDULE

(Rules 2 & 7)

ARTICLES OF INDENTURE

This Indenture made
 the day of 19
 between of
 in the parish (hereinafter called "the
 Student") of the First Part and of
 in the parish of
 (hereinafter called the parent or
 guardian) of the Second Part and
 of Licensed Land
 Surveyor (hereinafter called "the Surveyor") of the Third Part witnesseth as
 follows –

1. The student being duly qualified so to do (as is testified by the certificate of the Chairman of the Land Surveyor Board endorsed herein) of his own free will binds himself student/pupil to the surveyor to be taught and instructed in the profession of a land surveyor for the term of years from the date hereof.

2. The student covenants with the surveyor as follows –

- (a) that he will during the said time be and truly serve the surveyor as a student in the profession of a land surveyor carried on by him at in the parish of or at any other place or places where the surveyor may from time to time during the said time carrying on the same;
- (b) that he will during his term of indenture to the surveyor –
 - (i) diligently attend to the business and concerns of the surveyor;
 - (ii) obey and execute the lawful and reasonable commands of the surveyor;
 - (iii) not depart or absent himself from the service or employ of the surveyor at any time during the said term without his consent which shall not be unreasonably withheld; and
 - (iv) at all times during the said term serve the surveyor truly, honestly and diligently;

- (c) that he will not cancel, obliterate, spoil, destroy, waste, embezzle, spend or make away with any of the notes, papers, writings, money, stamps, instruments or property, as the case may be, of the Surveyor;
- (d) that he will in all respects acquit and demean himself as an honest and faithful student ought to do.

3. The parent or guardian covenants with the Surveyor that

- (a) the student will faithfully perform each and every covenant set out in Clause 2 hereof;
- (b) if the student shall fail or neglect to perform each and every covenant set out in Clause 2 the parent or guardian will indemnify the Surveyor against all loss, damage or legal liability which he may incur consequent upon the said neglect or failure of the student.

4. In consideration of the premium of \$1,000 paid to the Surveyor by the student (the receipt whereof the Surveyor hereby acknowledges) the Surveyor covenants with the student that

- (a) he will accept and take the student for the said term of _____ years as his student;
- (b) he will according to the best of his power, skill and knowledge instruct the student or cause him to be instructed in the profession of a land surveyor and in all things incidental thereto in such manner as he now practises or at any time hereafter during the said term shall practise the same;
- (c) at the expiration of the said term he will do the best he can to cause and procure the student to be examined and licensed as a land surveyor provided the student shall have duly and diligently served his studentship and shall have passed all such examinations as students to surveyors are required to pass before receiving a licence.

IN WITNESS WHEREOF the parties hereto have hereunto set their hands and seals the day and year first hereinbefore written.

SIGNED, SEALED AND DELIVERED BY
 the abovenamed

in the presence of

SIGNED, SEALED AND DELIVERED BY
 the abovenamed

in the presence of

1993/56.

SECOND SCHEDULE

(Rules 3 (2)(c) & 3(3))

PART I

AUSTRALIA:	Degree of Bachelor of Surveying	- University of Melbourne, Australia
	Degree of Bachelor of Applied Science (Surveying)	- Royal Melbourne Institute of Technology, Australia
	Degree of Bachelor of Surveying	- University of New South Wales
	Degree of Bachelor of Technology in Surveying	- South Australian Institute of Technology
	Degree of Bachelor of Applied Science (Surveying)	- Western Australian Institute of Technology, Perth
CANADA:	Degree of Bachelor in Surveying and Engineering	- University of Laval
	Diploma in Survey Technology	- Georgian College, Barrie, Canada
	Degree of Bachelor in Engineering and Surveying	- University of New Brunswick
1993/56.	CARICOM COUNTRIES:	Degree of Bachelor of Science in Land Surveying - University of the West Indies

KENYA:	Degree of Bachelor of Science in Surveying and Photogrammetry	- University of Nairobi	
NEW ZEALAND:	(a) Degree of Bachelor of Science (Land Surveying))	
	(b) Degree of Bachelor of Surveying) - University of Otago	
	(c) Diploma in Land Surveying))	
UNITED KINGDOM:	Diploma in Surveying	- University of London	
	Degree of Bachelor of Science in Land Surveying Science	- University of East London (formerly North East London Polytechnic)	1993/56.
	Probationer to the Royal Institute of Chartered Surveyors prior to 1967 Passed or exempted from all written papers of the full professional examinations (excluding thesis, practical task or test of professional competence) for associate membership to the Royal Institute of Chartered Surveyors.		

PART II

(Rule 10(2))

CANADA:	Diploma in Survey Technology	- Northern Alberta Institute of Technology, Edmonton, Alberta, Canada	
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1993/56.	UNITED KINGDOM:	T. E. C. Higher Diploma in Surveying	- University of East London (formerly North East London Polytechnic)
		Part I/Part II of the Examination in Land Surveying	- Royal Institution of Chartered Surveyors

THIRD SCHEDULE

(Rule 12)

PART I

SYLLABUS FOR THE BARBADOS LAND
SURVEYORS EXAMINATION

1. The papers for first examination are as follows:
 - (a) 2 papers in Trigonometrical Surveying;
 - (b) 1 paper in Topographical Surveying;
 - (c) 1 paper in Land Registration and Land Law; and
 - (d) an assessment and report on practical work approved by the Board.
2. The papers for final examination are as follows:
 - (a) 1 paper in Applied Surveying;
 - (b) 1 paper in Survey Computations;
 - (c) 1 paper in Cadastre;
 - (d) 1 oral examination;
 - (e) a practical task approved by the Board and
 - (f) a report on the work of the student during the period of his attachment made by the Chief Surveyor.

PART II

FIRST EXAMINATION

A. The first examination must be based on the following:

1. Trigonometrical Surveying –

- (a) the principles and practice of chain surveying for plans of small open areas, buildings, etc. chains, tapes, rods, optical squares, clinometres, choice of stations and chain lines, circumvention of obstacles, chaining of slopes, making and interpreting entries in field books, plotting from field notes, sources of error, permissible errors;
- (b) the principles and practice of spirit levelling, knowledge of levelling staves and dumpy and tilting levels, self aligning level, sections of levels, spot heights, stadia reading, use and adjustment of dumpy, tilting and self aligning level, making and interpreting entries in field books, reduction of field observations, plotting of sections and spot levels, interpretations of large scale contours, sources of error, permissible errors;
- (c) basic optical and mechanical principles of theodolite, levels, plane table equipment, prismatic compass and subtense apparatus, relative precision and users adjustments of these instruments;
- (d) principles and practice of traversing, precautions against gross errors and their location, sources of error and accuracies obtainable, computations in plane rectangular co-ordinates and simple methods of adjustments;
- (e) subtense: use of subtense bar, used of the theodolite for tacheometry;
- (f) surveys for cadastral and engineering purposes, minor triangulation and traverse network for cadastral surveys including connections to major framework survey, the layout and observing procedure for minor triangulation station, marking and description, intersection, resection by direct and semi-graphic methods, surface base measurements, corrections for standard, temperature, slopes and height above Mean Sea Level;
- (g) trigonometrical heights, curvative and refraction;
- (h) calculation and mechanical ascertainment of area, the planimeter, the computing scale, Simpson's and the trapezoidal rules, calculation of volumes, setting out of townships and simple engineering works, subdivision of land, adjustment of data, setting out roads, highways,

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bridges, etc., problems involving simple compound and reverse curves, also vertical and simple transition curves;

- (i) hydrographic surveying of coastal areas and rivers, tides and tide gauges;
- (j) field astronomy, mean and sidereal time, hour angles of sun or stars, use of the Star Almanac for Land Surveyors, the observation and calculation of latitude by meridian altitude of sun or star; the observation and calculation of azimuth by sun or star observing altitude or time, correction to observe altitude and directions, use of Polaris Tables for latitude and azimuth. The effects of small errors in time, altitude and latitude on the computed results;
- (k) field procedure for Geodetic Surveys: reconnaissances; beaconing and observation of geodetic triangulation and base lines, construction of permanent trigonometrical stations, layout and observation of precise levelling nets, construction of permanent bench marks and crossing of wide rivers. Accuracies attainable with modern equipment and methods;
- (l) knowledge of triangulation networks in Barbados;
- (m) knowledge of level networks and bench marks in Barbados;
- (n) the concept of geoid and reference spheroid, definitions of geodetic and astronomic latitudes and longitudes and the principal radii of curvative, spherical excess excluding computations on the spheroid;
- (o) map projections: representations of the sphere on the plane, scale and scale error, distortion of angle and area, orthomorphic (conformal) projections, a general knowledge of the principles and properties of the following projections – Mercator, Cassini, Lambert conical orthomorphic and transverse Mercator (Gauss conformal) for the sphere;
- (p) procedure to be followed in reducing observed distances and angles to the projection in Barbados;
- (q) errors: classification and nature of errors of observation, the normal (Gaussian) frequency distribution of standard error and probable error of a single observation and of the arithmetic meaning of several observations, rules for the combination of independent errors, the basic principles of least squares adjustments – an appreciation of the applications excluding formation and solutions of equations.

2. Topographical Surveying:

- (a) Map Reading: the interpolation of topography on large scale and small scale plans, conventional signs, methods of depicting relief, routine problems, problems on intervisibility, slopes and gradients;
- (b) the Compass: use of the Prismatic Compass, correction to Magnetic North for annual variation, relation of Magnetic North, Grid North and True North, simple problems involving resection and intersection;
- (c) the Alidade, Indian Clinometer and Trough Compass, including all users and adjustments, plotting of grids and control points on mounted plane table sheets including the use of dimensionally stable materials, plane table triangulation and traverse detail surveying and contour plotting, sources of error, accuracies attainable, trigonometrical heighting, curvature and refraction, sources of error, accuracies obtainable, use of the subtense bar;
- (d) Ground Survey: comparative value and procedures under differing conditions for detail surveying by various methods;
- (e) chaining, tacheometry, compass traversing, plane tabling using ordinary and telescopic alidades;
- (f) comparative values and procedures under different conditions for contouring by various methods;
- (g) plane tabling and spirit levelling, aneroid heighting;
- (h) Elementary Air Survey: the geometry of the vertical and near vertical air photograph, stereoscopic parallax, radial line plotting, error due to tilts and ground relief;
 - (i) the relationships between focal length, format, lens angle, scale and flying height;
 - (j) the principles and use of elementary plotting aids, including simple stereoscopes, parallax bars, slotted template equipment, radial line plotters, and simple reflecting plotters;
- (k) photography and Map Production: general knowledge of the photographic processes used in air photography, general knowledge of map reproduction by photolithography;
- (l) the principles of photo-interpretation.

3. Land Registration and Land Law

A general knowledge of the history of land alienation and record leading to the development of Registration of Deeds and Title and the individual ownership of land.

A general knowledge of the principles and practice of Registration of title, including:-

Features to be combined in efficient systems; benefits conferred by an efficient system; character and working features; cadastres; the principles and practice of boundary definition and demarcation; machinery of record; mutation; mortgage.

A general knowledge of the Law of Property as it may affect boundaries and the determination and description of boundaries.

A general knowledge of the history and development of laws affecting Real Property rights in Barbados.

A general knowledge of the history and development of surveying and mapping in Barbados.

A general knowledge of the history and development of legislation affecting land and the development of land in Barbados in particular Health and Town Planning legislation.

A working knowledge of the various cadastral systems, and means of boundary demarcation, description and recording.

A working knowledge of any legislation currently in force which may affect:-

- (i) Determination and survey of boundaries.
- (ii) Planning and development of land.
- (iii) Training and discipline of Land Surveyors in practice.
- (iv) Valuation and Taxation on land.

A working knowledge of legislation affecting the compulsory acquisition of land by Government.

A working knowledge of the requirements and procedures involved in affecting subdivision of land.

PART III

FINAL EXAMINATION

B. The Final Examination must be based on the following:

- (1) Trigonometrical Surveying
 - (a) trigonometrical and topographical surveying – as for First examination;
 - (b) a knowledge of electromagnetic distance measurement and its applications, basic principles and field operation of a typical ground instrument, field and office computations.
- (2) Survey Computations
 - (a) any computations relating to syllabus for trigonometrical and topographical surveying;
 - (b) a knowledge of computing equipment and techniques.

Cadastral

The syllabus for this examination shall be the same as that for the First Examination: Land Registration and Land Law but the examination should endeavour to test the candidates development in the application of knowledge in practical situations following his attachment period.

FOURTH SCHEDULE

(Rules 15(1) & (3) & 18(1))

EXAMINATION FEES

Column 1	Column 2
First Examination	\$100.00
Final Examination	\$150.00
Examination Review	\$250.00
