Section 2. Land Surveyor Intern Certificate.

- (a) Any "curriculum approved by the Board" must include at least thirty (30) semester credit hours in surveying as follows:
- (i) Core Subjects. A minimum of 21 semester credit hours is needed from the following categories as specified.
  - (A) Elementary and Advanced Surveying a minimum of 9 semester credit hours that contain any of the following topics:
    - (I) care and use of instruments;
      (II) leveling;
      (III) traversing;
      (IV) area calculation;
      (V) earthwork volume calculation;
      (VI) astronomy;
      (VII) note scrivener (scribe);
      (VIII) topographic data acquisition;
      (IX) triangulation;
      (X) coordinate geometry;
      (XI) photogrammetry;
    - (XII) public land survey system;
    - (XIII) section subdivision;
    - (XIV) ethics for professional surveyors;
    - (XV) global positioning systems; or
    - (XVI) records research.
  - (B) Office Tasks (Office Practicum) a minimum of 3 semester credit hours that contain any of the following topics:
    - (I) board drafting;
    - (II) computer aided drafting;
    - (III) map preparation;
    - (IV) subdivision drafting and design; or
    - (V) data management and analysis.

	(C) Route Surveying – a minimum of 3 semester credit hours that contain any of the following
topics:	
	(I) P-line/center line establishment;
	(II) curves – horizontal, vertical, etc.;
	(III) route types – utility & transportation; or
	(IV) construction staking and calculation.
topics:	(D) Boundary Law – a minimum of 6 semester credit hours that contain any of the following
	(I) field search and identification;
	(II) real property law interpretation; or
	(III) document preparation
	(1.) land descriptions;
	(2.) maps and plats; or
	(3.) report of survey.
	cive Subjects. A minimum of 7 semester credit hours is needed from this category, with a lum of 4 semester credit hours in any one major area.
	(A) Mine Surveying;
	(B) Water and water rights;
	(I) water law;
	(II) hydrology;
	(III) hydraulic engineering; or
	(IV) hydrographic surveying.
	(1.) inland water boundaries
	(C) Geodesy;
	(I) horizontal control surveys and computations;
	(II) vertical control surveys and computations;
	(III) geodetic datum;
	(IV) global positioning systems; or
	(V) precise control surveys.
	(D) Cartography; or

(I) map projections;
(II) property subdivisions;
(III) utility and transportation mapping; or
(IV) geographic information systems.
(E) Advanced Surveying Courses in subjects not covered in (ii) a-d above
(I) State specific laws;
(II) survey data management;
(III) site planning; or
(IV) real property law.
(b) Any "curriculum approved by the Board of at least four (4) years" is one that meets one of the following definitions:
(i) An undergraduate or graduate degree in a surveying or geomatics program that is accredited by ABET/EAC, ABET/ETAC or ABET/ANSAC;
(ii) An undergraduate or graduate degree in an engineering program that is accredited by ABET/EAC that also includes at least thirty (30) semester credit hours in surveying as set forth in paragraph (a) of this section; or
(iii) An undergraduate or graduate degree (not in surveying, geomatics, or engineering) that includes at least thirty (30) semester credit hours in surveying as set forth in paragraph (a) of this section and also contains other specific coursework:
(A) A combination of college level mathematics and basic sciences (with a laboratory component) appropriate to the discipline:
(I) Mathematics (8-10 semester credit hours) must include:
(1.) college algebra;
(2.) college trigonometry; and
(3.) technical statistics (e.g. non-business statistics).
(II) Basic Sciences (8-10 semester credit hours) must include lab-based courses in at least two of the following areas:
(1.) physics (preferred);
(2.) geology (preferred);
(3.) chemistry; or
(4.) biology.

- (III) A general education component that complements the technical content of the curriculum:
  - (1.) English (6-8 semester credit hours), which can include:
    - a. composition;
    - b. literature;
    - c. public speaking; or
    - d. technical report writing.
  - (2.) Other (5-8 semester credit hours):
  - a. social sciences (e.g. economics, history, political science, psychology, sociology, geography, etc);
    - b. humanities (e.g. philosophy, religion, literature, etc.;
    - c. visual and performing arts (e.g. music, art, theatre, etc); or
    - d. business and management.
- (c) A "curriculum approved by the Board of at least two (2) years" is defined as:
- (i) An Associate degree in a surveying or geomatics program that is accredited by ABET/ETAC or ABET/ANSAC; or
- (ii) An Associate degree (not in surveying or geomatics) that includes at least thirty (30) semester credit hours in surveying as set forth in paragraph (a) of this section and also contains other specific coursework as defined under (b) (iii) of this section; and
- (iii) Two (2) years of combined office and field experience in land surveying, of which one (1) year shall have been in charge of land surveying projects under the supervision of a licensed professional land surveyor.
- (d) Official transcripts must be provided directly to the Board by the registrar from the Applicant's educational institution(s).
- (e) An "examination in the fundamentals of surveying" is defined as the NCEES Fundamentals of Surveying (FS) exam.