

**Federal University of Minas Gerais  
School of Engineering  
Postgraduate Program in  
Sanitation, Environment, and Water Resources**

**Notice of Selection 2017/2nd Semester – Doctorate**

The Coordinator of the Graduate Program in Sanitation, Environment, and Water Resources, of the School of Engineering of the Federal University of Minas Gerais (PPGSMARH) MAKES IT KNOWN that, from the time of **00:01 on 29/05/2017 (Monday) until the time of 23:59 on 26/06/2017 (Monday)**, registration for the selection of candidates for the Doctorate Course will be open.

Registrations will be made **exclusively by internet**. To register, the candidate must access the Program's webpage at [www.smarh.eng.ufmg.br](http://www.smarh.eng.ufmg.br), fill out the application form, and submit it along with the other documents requested in item II of this Notice, in a PDF file, during the application period. Contacts: Telephone +55 (31) 3409-1882, E-mail: [posgrad@desa.ufmg.br](mailto:posgrad@desa.ufmg.br), Webpage: [www.smarh.eng.ufmg.br](http://www.smarh.eng.ufmg.br). The Office of the Graduate Program in Sanitation, Environment and Water Resources, is located at: **Federal University of Minas Gerais - UFMG.**

**Belo Horizonte/MG Av. Antônio Carlos, 6627 Pampulha – School of Engineering at UFMG - Building 1 – 4th floor - Room 4619 - CEP 31270-901.**

**The Office is open:** Monday thru Friday from 09:00AM to 12:00PM.

**I - Vacancies.** 8 (eight) vacancies will be offered for admission for the second semester of 2017, two (2) vacancies for concentration in Sanitation, four (4) vacancies for concentration in the Environment, and two (2) vacancies for concentration in Hydraulics and Water Resources.

**II - Requirements for Registration.** Candidates must hold a diploma of higher education, recognized under the terms of current legislation, which includes disciplines considered related to the area of study intended, at the discretion of the University Program. The candidate should register at the PhD level in one of the three areas of concentration: (i) Sanitation; (ii) Environment; (iii) Hydraulics and Water Resources. Candidate registration will be made by completing the Electronic Registration Form directly on the Program's web page and will be accompanied by the complete submission of the scanned documents (PDF format, only the photo will be in JPEG format). Entries can only be made during the defined registration period.

**Documents Required Digitally:**

**a) Application form** in the standard format as set by the Program Coordination and available at <http://www.smarh.eng.ufmg.br>;

**b) Recent 3x4 photo** (in JPEG format);

**c) Undergraduate academic history and proof of completion of the undergraduate course (diploma)** or of another document proving that the candidate is in a position to complete the undergraduate course before the period for academic

registration in the postgraduate course. Such registration is conditional upon the completion of graduation;

**d) Curriculum Vitae - detailed** – recommended model: Lattes Curriculum Vitae;

**e) Curriculum Vitae - summarized** in the standard template form as set by the Program Coordination, available at <http://www.smarh.eng.ufmg.br/selecao.php>;

**f)** Documentary evidence of all items reported in the Summarized Curriculum Vitae. The lack of any of these documents will result in the exclusion of the item to which it refers for scoring purposes. **These documents should be organized and numbered according to the sequence in which they are mentioned in the Summarized Curriculum Vitae;**

**g) Personal documents:** Birth or marriage certificate; identity card or identification document nationally recognized by law and within the period of validity; Personal Identification Number (CPF), if not on the valid identification document); Document of discharge from Military service (when necessary); Proof of residence; Certificate of electoral discharge to be obtained at <http://www.tse.jus.br/eleitor/certidases/certidao-de-quitacao-eleitoral> or issued by the TRE.

**h)** Foreign candidates must also submit the documents as required by specific legislation according to the information available at: <https://www2.ufmg.br/drca/drca/Home/Pos-Graduacao/Academico-Registro>;

**i)** If the candidate already has a master's degree, he / she must send a transcript and proof of completion of the master's course.

**j) Declaration of Availability**, given by the candidate, expressing a commitment to the dedication exclusively or partially, in the latter case with a dedication of at least 30 (thirty) hours per week, during the entire doctoral period (48 months);

**k) Two letters of recommendation.** The candidate must provide in the online form the email addresses of 2 (two) advisers who will provide recommendations for the candidate. The advisers will be informed automatically by email and must accept that they are willing to prepare the letter of recommendation. They should access the link where they will be able to fill in the fields of the letter of recommendation. Once this has been done, the system will notify the Office and the candidate that the letter has been completed. If the candidate wishes, he / she may change their referral choice (within the registration deadline) provided that the letter of recommendation has not already been filled out by the previously selected adviser. The letters of recommendation can be filled out in Portuguese, Spanish, or English. Note: It is the responsibility of the candidate to ensure that the two letters of recommendation are completed by the selected advisers. The absence of one or both letters of recommendation will result in the automatic rejection of the candidate's registration.

**l) Research plan**, as presented in the model available at: <http://www.smarh.eng.ufmg.br/selecao.php>, including the line of research from among those included in **Annex I** of this Call for Proposals. **The Research Plan** should be

presented with a title page that includes its title, the line of research it will follow, and the candidate's signature.

**m) Memorial**, which should be presented with a cover page (which does not count as a page), with the identification of the chosen line of research and the candidate's signature. The Memorial must be written by the candidate, using no more than 5 (five) pages, placing his / her research project in the context of his / her scientific and academic trajectory and presenting how his / her postgraduate studies will be included in his / her planning to act as researcher.

During the registration period, the candidate can modify his / her registration, if he / she so desires, by resubmitting his / her documentation, taking advantage of the last version submitted through the webpage of the Selection Process.

The documents sent should be legible, properly framed on the page (in a position that facilitates reading without the need to turn the page), without shadows or stains that make them difficult to read, and without cutting the margins of the text through inappropriate framing (truncated text); **Failure to comply with these requirements will justify the rejection of the registration.**

Candidates with special needs must inform the Office of the Graduate Program of the special conditions necessary for their participation in this selection process.

After registration, candidates will receive an identification number that will be used to maintain their anonymity in any future required process steps.

The documents of all the candidates will be analyzed by the SMARH Office on **06/27/2017 (Tuesday) and 06/28/2017 (Wednesday)**. Candidates with complete documentation and who are in compliance with the terms of this Notice will have their registrations **approved**.

If the candidate is approved in the selective process that this Notice covers, printed copies of the scanned documents will be requested for their academic record.

**III - The Examining Board.** The selection of candidates will be carried out by Examining Committees corresponding to the areas of concentration of the Program, designated by the University, each composed of at least two Ph.D. professors. The nominal list of Examining Committees will be disclosed in the Office and on the Program's webpage, up to 48 hours before the start of the selection process, together with the Declaration of the Inexistence of Encumbrance and Suspicion of each member of the committee in relation to the candidates enrolled in this contest.

**IV - The Selection Process.** The selection process of the candidates for Ph.D. will have an eliminatory and classificatory character and will consist of 3 evaluations, totaling 100 points. To be approved, the candidate must obtain at least 60% of the total points (100 points) distributed in the three evaluations.

**1) Curriculum analysis**, with a total value of **40 points**, distributed among the "Professional Experience" questions, with a maximum score of 10 points, "Scientific Papers Published", with a maximum of 20 points, "Postgraduate degree *Stricto Sensu* and *Lato Sensu*" in the candidate's area, with a maximum of 10 points;

**2) Analysis and oral argument of the Research Plan and the Memorial, with a total value of 60 points.**

**The analysis of the written text and the oral argument of the Research Plan**, in the amount of **45 points**, will be made based on the following criteria: format, relevance of the topic, scientific merit, feasibility of the execution of the research in the Program, appropriateness to one of the research lines of the Program, among those listed in **Annex I** of this Notice, and clarity in the presentation of ideas as well as the capacity for synthesis. In order to assess the feasibility of carrying out the research, the Commissions will take into account the suitability of the indicated research line and the technical and financial capacity to carry it out in the Program.

**The analysis of the written text and the oral argument of the Memorial**, in the amount of **15 points**, will be made based on the general evaluation of the preparation and motivation of the candidate for the development of his / her doctoral program, considering the following aspects: suitability to postgraduate studies in the Program, the compatibility of the candidate's profile with the areas and lines of research of the Program and their availability for the completion of the doctorate.

The time and place for the oral argument of the Research Plan and the Memorial for each candidate will be announced on **July 7<sup>th</sup>, 2017**, at the Office and on the Program's webpage.

The Oral Argument and Analysis of the Research and Memorial Plan will be held between the 10<sup>th</sup> (Monday) and 12<sup>th</sup> (Wednesday) of July, 2017, or in an absentee mode through Skype for those candidates who are outside of Belo Horizonte. In the latter case, the candidate must request the organization of these evaluations in an absentee way at the time of registration. The Examining Committee will contact each candidate who requested their evaluations via Skype to schedule a time for the evaluations to occur during the same period from the 10<sup>th</sup> thru the 12<sup>th</sup> of July, 2017.

To carry out their evaluations via Skype, the candidate must have the means to hold a videoconference and provide their Skype username on the application form. **The candidate will be responsible for testing the connection with the University, when requested, guaranteeing that they have sufficient internet bandwidth for sound and image transmission in real time. The University will not be responsible for connection problems originating from your local network.**

**V - The Final Result.** The Final Grade of the candidates who participated in all of the stages of the selection process will be the sum of the grades obtained from the Curriculum Analysis and from the Analysis and Oral Argument of the Research Plan and the Memorial. Candidates will be sorted by concentration area in descending order by Final Grade, indicating a result of: **"approved and classified"** or **"approved, but unclassified"** or **"disapproved"**. Approved candidates will be admitted to the doctorate and classified, by concentration area, within the limits of the vacancies

offered in this Call for Proposals. It will be adopted as a tie-breaking criterion between the candidates the grade obtained in the Analysis of the Research Plan, then in the Curriculum Analysis, and then in the Memorial Analysis.

The homologation of the results obtained by **the Doctorate Examining Committees** will be carried out by the Program Coordination Board on **July 13<sup>th</sup>, 2017**, in obedience with the conditions of this Notice, the Program Regulations, the UFMG Postgraduate General Regulations, the UFMG Statutes and General Rules, and relevant federal legislation.

The results of the **Doctorate's** selection will be published in the Program Office and made available on the Program's webpage on **July 14<sup>th</sup>, 2017**, with the grades obtained for each stage of the process and the Final Grade, in descending order, by area of concentration, along with the indication of results: "approved and classified", or "approved, but unclassified" or "disapproved".

According to UFMG General Rules, the deadline to appeal the results of the selection process is 10 (ten) calendar days from the date of disclosure of the final result. During this period the candidate will have access to their respective evaluations.

The appeal should be addressed to the Program Coordinator and delivered in-person or by a proxy with a simple power of attorney, to the Program Office, at the address and during the operating hours as stated in the preamble to this Notice. During the appeal process, the candidates will have access to their respective evaluations

Candidates for doctorates whose applications are rejected, candidates who have failed, and candidates who have been approved but not classified, will have a period of up to 30 (thirty) consecutive days, after the end of the period for the final appeal, to reclaim the documents that they submitted to the Program Office at the time of their registration. After this deadline, unclaimed documentation will be discarded.

**VI - Registration and Registration Date.** The candidate approved and classified in the selection process referred to in this Notice shall, **during the period from 07/24/2017 (Monday) to 07/25/2017 (Tuesday), finalize exclusively via the internet**, his / her previous registration, by completing an online form available on the webpage <https://sistemas.ufmg.br/cadastroprevio/>, **and must also submit the documentation required in item II of this Notice** to the SMARH Office (**from 09:00 to 12:00 and between 07/24/2017 and 07/26/2017**), located in Room 4619, on the 4th floor of Block 1, of the main office of the School of Engineering, on the Campus of UFMG Pampulha, accessible from Avenida Antonio Carlos 6627, CEP 31270 -901 - Belo Horizonte - MG. The DRCA will arrange for the Academic Record to be received upon receipt of the complete documentation of the selected candidate, in the required form (legible and non-erasable copies) and completion of the Pre-Registration Form by the classified candidate. The complete documentation of those selected will be sent to the DRCA by the Course Secretary **not later than July 27<sup>th</sup>, 2017 (Thursday)**.

The candidate who presented, during the enrollment period, a document attesting to being able to complete their undergraduate course before the period for academic registration in the postgraduate course, must submit in the Program Office, no later than **July 25<sup>th</sup>, (Tuesday) 2017**, a document proving the completion of the

undergraduate course (copy of the graduation diploma issued by an official or officially recognized establishment, or declaration of completion of the course that includes the date of degree graduation). No forward-looking statements will be accepted.

In accordance with current legislation, in the case of an undergraduate course completed abroad, a copy of the diploma for the undergraduate course with a consular authentication stamp and a sworn translation into Portuguese of the diploma of the undergraduate course must be presented, **except** for those whose originals were issued in Spanish, English or French.

**Foreign applicants** must submit to the Program Office, by **July 26<sup>th</sup>, 2017, (Wednesday)**, their National Foreign Registry – RNE number, a passport with a Permanent Visa, or a valid Temporary Student Visa, as well as their birth certificate showing parentage and any other documents as determined by the Program Office.

In accordance with the provisions of art. 39, § 2, of the General Regulations of UFMG, "each student shall have the right to a single academic record, corresponding to a single vacancy in the course in which he was admitted to UFMG." You will automatically lose the right to the vacancy and the classified candidate who does not complete the Prior Registration on the date set for performing this procedure or who does not submit any of the documents requested in this Notice will be considered formally withdrawn. The filling of vacancy (s) resulting from these situations will be done by calling other approved candidates, in strict observance of the order of classification according to the descending order of points obtained in the Selection Process, until the deadline for sending the documentation to the DRCA.

The registration of the approved and classified candidates will be done through the Postgraduate Academic System, according to the guidance of the Program Office, on a date to be disclosed, in observance of the University's academic calendar.

In compliance with Resolution No. 08/2008, adopted on October 14<sup>th</sup>, 2008, of the Teaching, Research, and Extension Council of the University, the doctoral students selected in the selection process referred to in this Notice must take a **foreign language** exam within a maximum period of **20 months**, counting from the date of their first enrollment in the Program. Completion of the test (s) is a prerequisite for the continuation of postgraduate studies at the doctoral level, requiring a minimum score of **60%**. PhD students must hold proof of knowledge of **English** and another foreign language, chosen from the following languages: **German, Spanish, French, or Italian**. Information concerning the test can be obtained from the Program Office.

Belo Horizonte, May 23<sup>rd</sup>, 2017. Professor Nilo de Oliveira Nascimento, Coordinator of the Graduate Program in Sanitation, Environment, and Water Resources of the Federal University of Minas Gerais.

## **Annex I**

### **Description of the Lines of Research of the Program**

Line of Research	Description	Areas of C
<b>Assessment and management of impacts and environmental risks</b>	Indicators of the biophysical and socio-economic quality of the environment. Vulnerabilities, impacts and risks related to human health, biota and biodiversity, and the physical-chemical quality of the environment. Characterization of projects and works modifying the environment. Assessment, quantification, and prediction of environmental and health impacts and risks. Prevention, mitigation and compensation of environmental impacts. Impacts and risks associated with the management of water resources and sanitation. Vulnerabilities, impacts and risks of extreme events in water resources.	Environme and Wate Sanitation
<b>Pollution characterization, prevention, and control</b>	Characterization, modeling, prevention, and recovery of aquatic environments; Treatment and reuse of industrial liquid effluents; Treatment of effluents by adsorption, membranes, oxidative processes, photocatalysis, coagulation and flocculation; Statistical treatment of environmental data, meteorology and its influence on air pollution, monitoring and evaluation of air quality, numerical modeling of meteorological conditions and air pollution	Environme
<b>Solid waste management</b>	Characterization and evaluation of the physical, chemical, and biological properties of urban and industrial solid wastes. Minimization, with an emphasis on the reuse and recycling, of urban and industrial solid waste. Biological and physico-chemical treatment of urban and industrial solid waste. Incorporation of residues into ceramic bodies, solidification / stabilization. Design, operation, monitoring and decommissioning (closure) of urban and industrial solid waste treatment plants. Treatment and reuse of industrial waste.	Sanitation,
<b>Urban hydrology and drainage</b>	Characterization and modeling of hydrological processes in urban areas and development of studies aimed at the rational management of the systems, covering the following topics: (i) Quantitative and qualitative monitoring and modeling in urban areas; (ii) Design, planning, and dimensioning of compensatory technologies and sustainable interventions in water bodies; (iii) Development of evaluation and decision support systems to evaluate management techniques and policies.	Hydraulics Resources
<b>Modeling of hydrological processes</b>	Conception and application of stochastic and deterministic mathematical models of hydrological variables, with emphasis on the topics of (i) statistical hydrology; (ii) stochastic hydrology; (iii) empirical and conceptual models of rainfall-flow transformation and hydrological cycle variables; (iv) hydrological forecasts and (v) storage and flow in porous media.	Hydraulics Resources
<b>Physical and mathematical modeling in hydraulics</b>	Studies of flows in hydraulic systems through physical and mathematical models: (i) Design, construction, experimentation, and analysis of physical models of hydraulic structures; (ii) Uni and bidimensional mathematical modeling of hydraulic systems, using computational tools and GIS; (iii) Environmental Hydraulics - River systems and impact mitigation structures; (iv) Analysis of uncertainties in physical and mathematical modeling.	Hydraulics Resources
<b>Public policies and management in sanitation, environment and water resources</b>	Evaluation of public policies, at the national, state, and municipal levels in relation to sanitation, the environment, and water resources. Evaluation and formulation of management models for sanitation, environmental management, and water resource management services. Formulation of public policy instruments and management in these fields. Evaluation, characterization, and formulation of planning instruments, such as state and municipal sanitation plans; Environmental planning at various levels; State, municipal, and basin plans in the area of water resources. Evaluation of population perception in relation to policy and management models. Evaluation and formulation of participatory management models. Use of decision support methods in public policies and management.	Sanitation, and Wate Environme

<b>Quality and treatment of water for human consumption</b>	Studies, through physical or mathematical models, of the stages of the supply systems, of the processes and unit operations inherent to water purification, and of the different treatment technologies. Studies of the physical, chemical, and biological characteristics of natural waters, the quality of drinking water, and the evolution of national and international drinking standards.	Sanitation
<b>Water resources systems</b>	Determination of flows of motorization for hydroelectric power stations. Evaluation of methods to determine ecological flows. Application of optimization techniques in water resources systems. Multicriteria analysis, decision support systems, and expert systems. Studies on the vulnerability to and economic evaluation of flood damage. Analysis and development of water resources management tools.	Hydraulics Resources
<b>Wastewater treatment</b>	Research on wastewater treatment processes, with emphasis on urban sewage. Evaluation, modeling, and control of sewage treatment processes. Anaerobic digestion and treatment techniques and post-treatment of sewage. Treatment of sludge.	Sanitation