



**PLEASE, CHECK CAREFULLY THE SUGGESTED PROJECTS**  
**PROVIDE A COMPLETE RESEARCH PROJECT ACCORDING TO**  
**THE ATTACHED TEMPLATE FOR ONE OF THESE PROJECTS ONLY.**

<b>Project # 1</b>
<p>Electrical measurements are vital parts in industry. The choice of the appropriate electrical instruments must achieve a set of criteria. In this project, the student is asked to answer the following issues in his research project:</p> <ul style="list-style-type: none"><li>• What is the concept of electrical measurements?</li><li>• Discriminate between various types of electrical instruments.</li><li>• Mention the criteria for effective measuring systems,</li><li>• Choose for one industry/factory, describe the process of the selected application.</li><li>• Provide technical and economic study for the importance of preserving the high quality of process operation based on the quality of electrical measurements</li><li>• Comment on possible development issues in the field of electrical measurements.</li></ul>
<b>Project #3</b>
<p>The continuous development in electrical measurements must answer the rapid changes in the world. In this project, students are asked to prepare a historical survey on the electrical measurements in the medicine. The provided project covers the following items: What is the concept of medical engineering?</p> <ul style="list-style-type: none"><li>• Discriminate between various types of electrical instruments according their purpose.</li><li>• Provide a historical progress of the electrical devices for selected items in the medicine.</li><li>• Choose for medical application, provide technical and economic study for the importance of preserving the high quality of electrical measurements.</li><li>• Comment on possible development issues in the field of medical measurements.</li></ul>
<b>Project # 3</b>
<p>Measuring of electrical quantities (voltage, current, resistance, source frequency, electrical power and energy. In this project, students are asked to consider the following issues:</p> <ul style="list-style-type: none"><li>• What is the concept of electrical measuring instruments?</li><li>• Discriminate between various types of electrical instruments that used for measuring electrical quantities.</li><li>• Provide an assessment study for the different types in terms of the connection and principle of operation.</li><li>• Provide the failure sources in electrical measurements and the methods of mitigation.</li><li>• Design an electrical based measuring system for non-electrical quantities like speed, temperature and liquid levels.</li><li>• Comment on the future of electrical measurements.</li></ul>

#### Project # 4

Phasor measurement units are modern measuring instruments allocated to electrical grids for measuring voltage, current and frequency. In this project, students are asked to review the integration of these units in a survey model research project. When submit your project Please, be sure you are fully cover the following items:

- What is the concept of Phasor measurement units?
- Discriminate between various types of these instruments that used for measuring electrical quantities.
- Provide an assessment study for the different methods for allocating these instruments in electrical systems.
- Provide the failure sources in phasor measurement systems and the methods of mitigation.
- Design an electrical based measuring system for non-electrical quantities like fault detection.
- Comment on the future of electrical measurements using phasor measurement units.

#### Project # 5

Analogue instruments have many trouble, so digital instruments can replace them in many applications. Students in this project are asked to show the merits from this replacment. When submit your project Please, be sure you are fully cover correctly the following items:

- What is the concept of digital measuring instruments?
- Discriminate between digital and analogue types of electrical instruments that used for measuring electrical and non-electrical quantities.
- Provide an assessment study for the different types in terms of the connection and principle of operation.
- Provide the failure sources in analogue electrical instruments and the methods of mitigation.
- Design an electrical based measuring system for non-electrical quantities like speed, temperature and liquid levels using both types.
- Comment on the future of electrical measurements.

#### ضوابط البحث

مكونات المشروع كما يلي عنوان البحث، ملخص، مقدمة، المنهجية والنتائج والمناقشة، في النهاية خلاصة البحث والمراجع.	مكونات البحث
يجب أن يعكس العنوان تفاصيل العمل المقترح لا يزيد عن 15 كلمة	عنوان البحث
استعرض ملخص ما سيعرض من خلال المشروع في حدود 150 كلمة	ملخص البحث
حدد أهداف البحث وعلق على طريقة التعامل مع موضوع البحث.	المقدمة
عبارة عن استعراض البحث بطريقة مرتبة بشكل منطقي ومسلسله وتغطي عناصر البحث المطلوب بطريقة علمية. يجب أن يغطي هذا الاجزاء المذكورة المتطلبات الرئيسية والموضحة قرين كل مشروع	المنهجية والنتائج والمناقشة
قم بتضمين ملخص للنتائج الرئيسية والاستنتاجات والآثار المهمة في هذا البحث. في حدود 150 كلمة ويفضل ان تكون في نقاط محددة.	الخلاصة
تفاصيل المصادر المنشورة للمواد المشار إليها أو المقتبسة في النص (بما في ذلك أي ملاحظات لأي مواقع ويب مستخدمة URL محاضرة وعناوين	المراجع
لا تتجاوز 15 صفحة	عدد الصفحات
العربية/الانجليزية	اللغة
1.5 بين الاسطر والهوامش 2 سم من جميع الاتجاهات	المسافة البينية

With my best regards, Associate Professor/ Ragab A. El Sehiemy