

English

for the Students of

Laboratory

Ehya Amal Saleh, PhD
Mohammad Rafatbakhsh

Tehran
2013/1391



The Organization for Researching and Composing
University Textbooks in the Humanities (SAMT)
The Center for Research and Development in Humanities

سرشناسه: عمل صالح، احیا

English for the Students of Laboratory/ Ehya Amalsaleh, Mohammad

عنوان و نام پدیدآور:

Rafatbakhsh.

مشخصات نشر: تهران: سازمان مطالعه و تدوین کتب علوم انسانی دانشگاهها (سمت)، مرکز تحقیق و توسعه علوم

انسانی، ۱۳۹۱ = ۲۰۱۳ م.

مشخصات ظاهری: هشت، ۱۹۲ ص.: مصور ۲۴×۱۷ س.م.

فروست: «سمت»؛ ۱۶۴۹. زبانهای خارجی؛ ۱۷۱.

شابک: ۸-۸۳۶-۵۳۰-۹۶۸-۹۷۸-۳۵۰۰۰ ریال.

وضعیت فهرست‌نویس: نیا

یادداشت: انگلیسی.

یادداشت: پشت جلد به فارسی: انگلیسی برای دانشجویان رشته علوم آزمایشگاهی.

آوانویسی عنوان: اینگیلیش

موضوع: زبان انگلیسی — کتابهای فالت — علوم آزمایشگاهی

موضوع: زبان انگلیسی — راهنمای آموزشی (عالی)

موضوع: علوم آزمایشگاهی — اصطلاحها و تغییرها

شناسه افزوده: رفعت بخش، محمد، ۱۳۴۰- Rafatbakhsh, M.

شناسه افزوده: سازمان مطالعه و تدوین کتب علوم انسانی دانشگاهها (سمت)، مرکز تحقیق و توسعه علوم انسانی.

The Organization for Researching and Composing University Textbooks in the Humanities (SAMT), The Center for Research and Development in Humanities.

رده‌بندی کنگره: ۱۳۹۱ ۸ع ۸/۱۱۲۷ PE

رده‌بندی دیویی: ۴۲۸/۶

شماره کتابشناسی ملی: ۳۰۹۷۳۴۷



The Organization for Researching and Composing University Textbooks in the Humanities (SAMT),
The Center for Research and Development in Humanities

English for the Students of Laboratory

Authors: Ehya Amalsaleh, PhD (Associate Prof., English Dept., Shiraz University of Medical Sciences & Mohammad Rafatbakhsh (English Instructor, Shiraz University of Medical Sciences)

Editor: The Editorial Staff of Samt

1st Impression: Winter 2013/1391

Print Run: 1000

Price: 35000 Rials

Typesetting and Lithography: SAMT

Text Printing: Printing and Publishing Organization of Awqaf and Charity Affairs

نشانی ساختمان مرکزی: تهران، بزرگراه جلال آل احمد، غرب پل یادگار امام (ره)، روبه‌روی پمپ گاز، کد پستی: ۱۴۶۳۶

www.samt.ac.ir

info@samt.ac.ir

تلفن: ۲-۴۴۲۴۶۲۵۰

قیمت: ۳۵۰۰۰ ریال. در این قیمت چاپ قیمت مذکور ثابت است و فروشنده‌گان و عوامل توزیع مجاز به تغییر آن نیستند.

هر شخص حقیقی یا حقوقی که تمام یا قسمتی از این اثر را بدون اجازه ناشر یا مؤلف، نشر یا پخش یا عرضه یا تکثیر یا تجدید چاپ نماید، مورد پیگرد قانونی قرار خواهد گرفت.

All rights reserved. No part of this "SAMT" publication may be translated, adapted, reproduced or copied nor its conceptual framework may be used in any form or by any means, graphic, electronic, mechanical, including photocopying, recording, taping or information storage or otherwise, etc. without prior written permission from the publisher. Also the key to the exercises is not allowed to be published by any means.

سخن «سمت»

یکی از اهداف مهم انقلاب فرهنگی، ایجاد دگرگونی اساسی در محتوا و شیوه تدوین کتب درسی دانشگاهها، بخصوص در زمینه علوم انسانی بوده است. به همین جهت شورای عالی انقلاب فرهنگی در تاریخ ۶۳/۱۲/۷ تأسیس «سازمان مطالعه و تدوین کتب علوم انسانی دانشگاهها» را که به اختصار «سمت» نامیده می‌شود، تصویب کرد تا اختصاصاً به این مهم بپردازد.

این سازمان با توجه به نیاز دانشجویان، در فرصتی خاص، علاوه بر تدوین متون آموزش زبان خارجی در مرحله عمومی، نیمه تخصصی و تخصصی برای علوم انسانی، در محدوده خاصی به تدوین کتب آموزش زبان تخصصی سایر رشته‌ها پرداخت که کتاب حاضر یکی از آنهاست.

کتاب حاضر برای دانشجویان رشته علوم آزمایشگاهی در مقطع کارشناسی به عنوان منبع اصلی درس «زبان تخصصی» به ارزش ۲ واحد تدوین شده است. امید می‌رود علاوه بر جامعه دانشگاهی، سایر علاقه‌مندان نیز از آن بهره‌مند شوند.

دشواری چنین کاری بر دانشمندان و صاحب‌نظران پوشیده نیست و به همین جهت مرحله کمال مطلوب آن، باید بتدریج و پس از پیشنهادهای اصلاحی ارباب‌نظر به دست آید و انتظار دارد که این بزرگواران از این همکاری دریغ نورزند.

Table of Contents

Unit	Title	Page
Acknowledgments		VI
Introduction		VII
1.	Where Lab Tests Are Performed	1
2.	What Is a Medical Technologist?	16
3.	The Safe Working Environment	32
4.	General Concepts and Administrative Issues	51
5.	Urine and Other Body Fluids Collection	65
6.	The Test Order	82
7.	Light Microscopy (LM)	96
8.	Decontamination: Contaminated Laboratory Waste	109
9.	Examination of the Blood	127
10.	Laboratory Techniques Commonly Used in Immunology	143
11.	Classification of Viral Pathogens into Hazard Groups	158
12.	Biochemistry	173
Glossary		187
List of Abbreviations		190
References		192

Acknowledgments

We would like to thank Dr. Ali Mahbudi for reading the book and his involvement in editing the book. We are also grateful to Dr. Nasrin Shokrpour and Fateme Seddigh for their constructive comments on the book. Many thanks also go to Elahe Rafatbakhsh for her design of the work. We would also like to express our thanks to Dr. Behbahani for his guidance on selecting the topics and subjects useful for the students of laboratory sciences.

Introduction

The role of laboratory science continues to grow as a crucial component of scientific data in the field of medicine. The data collected objectively plays an important role in the clinical management of the patient. Hence, the students should have access to the most recent findings and methods of collecting, and analyzing the samples in the laboratory. Given the spread of English as the language of international communication, an increasing number of people use English in most occupational contexts. And owing to the needs of the learner to actively appear in such contexts, studying, working, doing research in this field, the learners may not achieve this important goal if they are not equipped well with English as an international language. To meet this end, the present book was prepared. Having consulted with the field specialists as well as the related curriculum, we collected various reading texts from among recent and reliable sources in the field of laboratory sciences. The book employed the language appropriate to the activities of the discipline in terms of the grammar, vocabulary, terminology as well as discourse and genre.

The book assumes that the learners have some basic knowledge English and hence is designed for adult learners who have already passed general English and for those who have some preliminary knowledge of the discipline and/or are in the professional work institution. The book, then, is specifically designed for undergraduate students of laboratory sciences as the main source of their ESP course.

Although the units appear near the end of the book are more difficult, the instructor may change the order of the units and select the units which are either more interesting to the learners or more in need.

The students are advised to refer to the glossary and list of abbreviation at the end of the book.

The book contains, 12 chapters, divided into two sections: *Main Reading* and *Further Reading*. It contains:

- Some warm-up questions and exercises to make learners to think about the topic.
- Post-reading activities providing the learners with some contextualized practice in comprehension, and vocabulary areas.
- Exercises practicing in parts of speech area to help learners to use the appropriate form of the word in context.
- Cloze test evaluating learners' language competence.
- Translation practice helping the learners to work on and translate texts in their field of study.
- A glossary and list of abbreviation placed at the end of the book.

Given the spread of English as the language of international communication, an increasing number of people feel need to use English in their occupational contexts. And the students of laboratory sciences are no exception. They need English in laboratories, in the college, in research centers, etc. The learners may not achieve this important goal if they are not equipped well with English. To meet this end, the present book was prepared, containing various reading texts from among recent and reliable sources in the field of laboratory sciences. The book employed the language appropriate to the activities of the discipline in terms of the grammar, vocabulary, terminology as well as discourse and genre.